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British Birds

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NATURAL HISTORY
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Kittiwakes in southern England

Eastern Black Redstart

Storm-petrels and landbirds in Seychelles

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Front-cover photograph: First-winter male 'Eastern Black Redstart' *Phoenicurus ochruros phoenicuroides/rufiventris/xerophilus*, Holy Island, Northumberland, November 2011. *Steve Young/FLPA*

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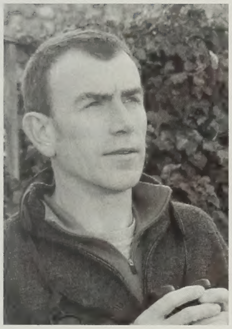

It is fitting that there is an article in this issue about a bird new to Britain; since the previous issue of *BB* went to the printer, the BOURC has announced two additions to the British List, with the first of those – Yelkouan Shearwater – being the officially recognised 600th British bird (see pp. 196). The field identification of both Yelkouan Shearwater and Cackling Goose (the 601st species) presents any amount of issues for record assessors, so the progress announced in the last few weeks is to be warmly welcomed. The members of both national record assessment bodies – BOURC and BBRC – deserve great credit for carefully ploughing through an enormous amount of work to get to this point. In contrast, the decision by the British Ornithologists' Union to abandon its Taxonomic Sub-committee, announced at the end of last year, seems to be curious at best – and anything but measured and careful. There are plenty of birders asking whether the BOU is still the right organisation to be administering the British List – and whether the people at the top even care that much about it.

Birders certainly care about seabirds, and it's interesting to have a perspective on the fortunes of our Kittiwakes from the south end of the UK. These colonies are that much smaller than the 'seabird cities' farther north, but they are still an integral part of the marine environment.

Roger Riddington

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BB eye

Raptor persecution and social media

In recent years it appears that there has been an increasing public interest and involvement in environmental matters, including wildlife crime, and that social media has played a pivotal role in this trend. As a plethora of internet-based sharing sites have continued to develop, websites and bloggers have taken full advantage of this communication network.

The power of social media was graphically illustrated by the recent campaign to challenge the European Commission's 'Fitness Check' of the Birds and Habitats Directives, legislation that has underpinned EU environmental protection. In May 2015, around 100 UK organisations published a position statement warning that this was the single biggest threat to biodiversity in a generation. That view was shared across Europe with collaboration from four international networks: BirdLife International, the European Environment Bureau, Friends of the Earth and the World Wide Fund for Nature. Aided by the use of social media, a staggering 520,000 European citizens sent a clear message to the European Commission of the value they place on the Nature Directives and a call for a renewed focus on better implementation and enforcement.

The seemingly unending problem of raptor persecution has also benefited from social media. Some of the notable sites taking up the cause include *Raptor Persecution Scotland*, *Birders Against Wildlife Crime* (BAWC) and *Standing up for Nature*, by former RSPB conservation director Mark Avery. The social reach of these, and others, is huge. Reports of wildlife crime, appeals for information and related topics can now be disseminated incredibly quickly.

While social media is a fairly recent phenomenon, the spectre of raptor persecution has loomed over the UK, particularly much of our uplands, for generations. Encouragingly, in the last 30 years there has been much to celebrate with a dramatic increase in the numbers of Common Buzzards *Buteo buteo* and Red Kites *Milvus milvus*, the re-establishment of breeding White-tailed Eagles *Haliaeetus albicilla*, and significant increases in Ospreys *Pandion haliaetus* and Marsh Harriers *Circus aeruginosus* too. However, we can be under no illusion that the conservation outlook for several species remains grim and that persecution continues. A range of peer-reviewed work illustrates that serious issues remain for Hen Harriers *C. cyaneus*, Golden Eagles *Aquila chrysaetos*, Red Kites and Peregrine Falcons *Falco peregrinus* in various parts of the UK.

WE'RE MISSING OUR HEN HARRIERS
PLEASURE KILLERS.

Guy Shorrock/RSPB

97. Social media was instrumental in promoting Hen Harrier day, Derbyshire, August 2015.

So who or what is to blame? From the scientific research, from the physical evidence, from the occupations of those convicted (69% gamekeepers in the 25 years to 2015) and a mass of intelligence information received by the RSPB and the statutory agencies the answer is clear: the perceived conflict between healthy raptor populations and intensive gamebird shooting. Encouragingly, in lowland Britain, the expansion of Buzzards and Red Kites suggests that things are improving. Yet serious problems remain on the upland driven grouse moors of northern England and Scotland. The Hen Harrier epitomises the scale of the problem. In 2015, just six pairs reared 18 young in England, despite Government published science indicating that there is enough suitable habitat for over 300 pairs. While those figures are an increase from 2014, this was overshadowed by the mysterious 'disappearance' of five breeding males and resultant failure of those breeding attempts.

The RSPB believes that the grouse shooting industry has to bear key responsibility for the poor conservation status of the Hen Harrier and some other raptors. Despite decades of legal protection, there is often little recognition of the problem and few signs of self-policing or acceptance that shooting must operate alongside healthy populations of Hen Harriers and other raptors in the landscape and within agreed environmental limits.

While the gamekeeper typically gets most of the blame, the true situation is far more complex, with errant landowners, employers and managers creating the environment for them to operate. If a gamekeeper is prosecuted, they will typically be well defended, keep their job and may even have their fines paid. A single day's grouse shooting may cost an individual over £2,000 – so fining the odd gamekeeper a few hundred pounds is an ineffective deterrent. In Spain, recent huge fines following wildlife poisoning incidents suggest that matters in the UK could be taken more seriously.

So what is being done? In 2009, the Government announced its six national wildlife crime priorities, which included raptor persecution, and a focus on six species (Golden and White-tailed Eagles, Hen Harrier, Red Kite, Northern Goshawk *Accipiter gentilis* and Peregrine). The National Wildlife Crime Unit has a vital role in helping to drive forward these national priorities, yet its very existence has been under threat recently! Secure and long-term funding for the Unit is essential (see p. 195).

Gathering hard evidence of offences committed in private and remote places remains incredibly difficult. The RSPB Investigations Section remains at the coalface and its involvement in gathering evidence and undertaking covert surveillance has been essential to the success of many court cases. This includes a very significant Scottish prosecution in December 2014 where, for the first time, a gamekeeper was jailed for raptor persecution. It will be interesting to see how this affects the psyche of others in this profession who are expected to break the law.

While convictions are important, the Government needs to bring far more pressure on employers and managers who encourage or condone criminal behaviour. Scotland now has an offence of vicarious liability, to try to improve accountability; and there have been two prosecutions, which will hopefully focus the minds of individuals who have until now hidden quietly behind the actions of their staff. Getting such legislation in place across the UK would be a serious statement of intent from Government.

In November 2014, a Norfolk gamekeeper was convicted for the worst English raptor poisoning case following the deaths of ten Buzzards and a Eurasian Sparrowhawk *A. nisus* on the Stody Estate. While he was perhaps fortunate to receive a suspended jail sentence, of more significance was the decision of the Rural Payments Agency to withdraw 75% of the agricultural subsidy paid to the estate in that year: an eye-watering sum of around £184,000. It is precisely this type of economic sanction that is most likely to focus the minds of estates about the actions of their staff. Again, the use of social media was instrumental in raising this issue and encouraging people to question the RPA about what action they were taking.

In recent years a far wider range of environmental concerns associated with driven grouse-moor management have been brought into focus. Many upland areas are designated as Sites of Special Scientific Interest. The UK has around 162,000 ha of upland blanket bog designated as SSSIs. These should be our upland crown jewels; yet just 10% of them are in favourable condition. In tandem with this there are widespread concerns about overburning, greenhouse gas emissions, water contamination and health issues around the use of lead shot. The disastrous floods this past winter have also raised questions about whether poor land management may be exacerbating the problem in some areas, since both upland drainage and over-burning promote run-off.

With these increasing wider environmental concerns there have also been calls for tighter regulation of the shooting industry. Compared with elsewhere in Europe and North America, game shooting in the UK is almost uniquely unregulated even though it is far more intensive in nature than almost anywhere else. With the serious and organised nature of crimes against raptors and other conservation problems, such sanctions would appear to be warranted. RSPB believes that a system of licensing could help, with an option to withdraw the 'right' of an individual to shoot game, or businesses to supply shooting services, for a fixed period following conviction for a wildlife or environmental offence.

RSPB-images.com

98. The illegal taking of this Northern Goshawk *Accipiter gentilis* and related offences in Scotland led to the first jailing of a gamekeeper.

Some people want to go further and ban driven grouse shooting altogether (Mark Avery's recent e-petition, initiated and promoted heavily via social media, garnered no fewer than 33,652 signatures in support of the idea, which shows the strength of feeling and the ability of social media to convey these concerns). Social media again came to the fore in helping to organise and promote the Hen Harrier Day events to highlight the continuing problems for this species. Despite torrential rain, in August 2014 around 570 soggy souls attended the first main event in the Peak District. In 2015, a social media Thunderclap message *We're missing our Hen Harriers – we want them back* went out to 5.7 million people. A number of UK events took place and Chris Packham's passionate speech to the 400+ attending the main event in Derbyshire highlighted the value of social media in raising awareness.

Birdwatchers and others in the countryside are the eyes and ears for many wildlife crimes. Reports via social media are now an important route for potential crimes to be reported to the authorities, and to the RSPB (which maintains the only centralised source of raptor persecution data, now stretching back several decades). There can also be some downsides to the immediacy of social media. It does allow incorrect or indeed misinformation to be circulated quickly. Occasionally, people are perhaps a little too quick to post information, such as possible wildlife crime, rather than reporting it to the police and allowing them and others to make the necessary enquiries first.

There is no doubt that social media is firmly here to stay and I believe that it has to be seen predominantly as a force for good, connecting people to what is happening in the environment and empowering them to campaign for change. Hopefully this will translate to real benefits for Hen Harriers and other raptors – if so, you will no doubt hear about it on social media first!

Guy Shorrock

Guy Shorrock is a Senior Investigations officer at the RSPB.

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Reprieve for National Wildlife Crime Unit

An eleventh-hour reprieve for the National Wildlife Crime Unit (NWCU), threatened with closure on 31st March, was some welcome news in this age of austerity. Joint funding by the Home Office and Defra guarantees that the NWCU's important work will continue up to 2020 at least. Here's Environment Minister Rory Stewart's statement from 1st March:

'The National Wildlife Crime Unit is a specialist unit dedicated to tackling wildlife crime, playing an important role in wildlife law enforcement both at home and internationally. It provides intelligence and direct assistance to individual police forces and other UK law enforcement agencies, including specialist support that allows warranted Officers to investigate wildlife crime. The Unit also acts as the UK policing focal point for EUROPOL and INTERPOL activity on all wildlife crime-related matters, and works in partnership with non-governmental agencies across the UK committed to tackling wildlife crime.

'Following the Spending Review 2015, Defra and Home Office Ministers have been considering the level of Government funding for the NWCU beyond March 2016. In recognition of the important contribution the Unit makes to tackling wildlife crime, both at home and abroad, I can confirm that Defra and Home Office Ministers have agreed that their respective departments will each provide the Unit with funding of £136,000 a year for the next four financial years. This will give the Unit significant financial stability and enable their vital work to continue until at least 2020. Those contributions will be in addition to the funding central Government provides to police forces in England and Wales to tackle all types of crime (including wildlife crime).

'In addition, Defra will provide the Unit with up to £29,000 a year over the next four years for specific work to tackle wildlife crime conducted online, as a developing area of global criminal activity.

'Government funding for the NWCU jointly provided by Defra and the Home Office up to March 2020, including additional support from Defra to tackle online wildlife crime, will total £1.204 million.'

The Head of the NWCU, Chief Inspector Martin Sims, said: 'I am delighted with this announcement. Four years is the longest period of secured funding since the Unit was launched in 2006. It provides the unit with stability for the future and to continue with our work.' See www.nwcu.police.uk

Doing the Curlew Walk – for 500 miles

Mary Colwell is a BBC Radio 4 natural history producer who is setting out to walk from the west coast of Ireland to the east coast of England to raise awareness of the plummeting Eurasian Curlew *Numenius arquata* population in Britain & Ireland.

She sets out from Co. Sligo on 21st April and estimates it will take her six weeks to reach the Wash. She describes why she's doing this in a video on her Crowdfunder website www.crowdfunder.co.uk/the-curlew-walk where people are invited to support her odyssey and to donate to Curlew research and conservation projects on both sides of the Irish Sea.

Here's what Mary has to say about her 500-mile walk: 'Why am I doing this? Curlews are beautiful birds. They have a haunting call which encapsulates the wildness of the meadows, marshes and uplands of the British Isles. For generations they have inspired poets, writers and artists, and also brought joy to anyone who hears them. Yet today their numbers are declining at an alarming rate – so much so they are now on the Red list of endangered species in the UK. Over the last 20 years Ireland has seen a 90% fall, Wales 80% and on average 50% through England and Scotland.

'I want to make this walk a big success. As I cross the British Isles, I will give talks as well as media interviews. I will also interview scientists, conservationists, artists, musicians, poets, farmers, walkers – anyone who is inspired by the Curlew and the beautiful places it inhabits. All this information will be collated and I will blog, Facebook and tweet (Twitter: @curlewcalls) as I go. Please note that this will be a positive walk – celebrating Curlews and what they have given us – no doom and gloom – and there is still time to help them recover.'

Yelkouan Shearwater is 600th British bird

The milestone has been reached – the 600th species added to the official British List maintained by BOURC is Yelkouan Shearwater *Puffinus yelkouan*, following the acceptance of a bird seen off Berry Head, Devon, on 29th July 2008 by Mike Langman and Mark Darlaston.

The Yelkouan Shearwater breeds on islands and coastal cliffs at the eastern end of the Mediterranean Sea; the majority of the population moves east outside the breeding season to winter in the Black Sea, but small numbers (presumably of the westernmost breeding birds) are known to move west and enter the North Atlantic to find food during the summer and autumn after breeding. Balearic Shearwaters *P. mauretanicus* also breed within the Mediterranean but primarily at the western end before moving into the North Atlantic in summer.

Martin Collinson, BOURC Chairman, said: 'It's a testament to over 200 years' enthusiasm and perseverance of British birders and ornithologists that the national bird list of a small, northern temperate country has reached 600 species. It is also satisfying that this milestone has been reached via an exemplary process of sharp birding, detailed field notes, photographs and research. Yelkouan Shearwater is a fascinating species, and it was both a pleasure and a challenge for the Records Committee to review the identification, migration patterns and vagrancy potential of this species, and its relationship with the critically endangered (and very variable) Balearic Shearwater.'

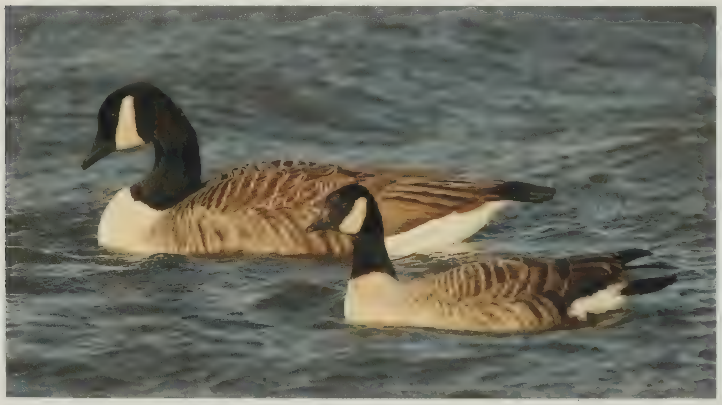
Paul French, BBRC Chairman, said: 'After several claims and false starts, this enigmatic seabird has finally earned its place on the British List. Like Scopoli's Shearwater *Calonectris diomedea*, this species was going to require an exceptionally well-seen and described bird to be acceptable, and we believe this record has made the grade in all areas. The submission was well supported by detailed notes from well-respected and experienced observers, backed up by photographs that showed all of the requisite features. All of this made the assessment surprisingly straightforward, and the committee accepted it unanimously in a single circulation.'

An article describing the sighting in detail is in preparation for *BB* by the two observers, Mark Darlaston and Mike Langman. A major identification paper on Manx/Balearic/Yelkouan Shearwaters was published in *BB* in September 2015 (*Brit. Birds* 108: 514–539; see also pp. 241–242).

And Cackling Goose is 601st British bird

Within three weeks of the 600-species barrier being broken, another long-awaited addition was chalked up by BOURC: Cackling Goose *Branta hutchinsii*. In this case, the official 'first' dates back 40 years, to a bird at Plex Moss, Lancashire, in November 1976.

The BOURC statement said: 'The taxonomy of the Canada Goose species complex has undergone revision, with separation of [Greater] Canada Goose *Branta canadensis* and Cackling Goose to specific level, with each species proposed to consist of a number of subspecies. Cackling Goose is also confusingly referred to as 'Lesser Canada Goose' but most birders use that name for the *parvipes* subspecies of Canada Goose itself.



Stef McElwee

99. 'Richardson's Cackling Goose' *Branta h. hutchinsii*, with Canada Goose *B. canadensis*, Linton Pond, Northumberland, January 2007.

'Having considered a number of candidates it was deemed that the Lancashire individual could be accepted as the first record of *Branta hutchinsii*. The subspecies was undetermined, but probably nominate *hutchinsii* ('Richardson's Cackling Goose').

'Cackling Goose breeds in northern North America, migrating to winter further south in Canada and the USA. It is generally accepted that the species is a rare but regular vagrant to the British Isles, with a handful of birds seen annually – primarily among Barnacle Geese *B. leucopsis* – in northwest Scotland and western

Ireland, but occasionally also with other species such as the Pink-footed Goose *Anser brachyrhynchus*. Most birds appear to be of the subspecies *hutchinsii*, although convincing candidates for *minima* ('Small Cackling Goose') and *taverneri* ('Taverner's Cackling Goose') have also been documented.'

Record sum raised at Birdfair 2015

Birdfair has broken its fundraising record yet again: £320,000 was raised for BirdLife's campaign to prevent the illegal killing of migrant birds in the Eastern Mediterranean. Birdfair Co-organiser Tim Appleton said: 'I'm delighted that Birdfair 2015 has smashed the previous year's fundraising record. A lot of hard work from organisers, volunteers, sponsors and attendees goes into this event, and we are proud to raise an enormous amount of money to support BirdLife's work in the Eastern Mediterranean.'

BirdLife estimates that 25 million migrant birds are killed by illegal hunting along the Eastern Mediterranean flyway every year. BirdLife's CEO, Patricia Zurita, said: 'Bringing the death toll down from 25 million to zero is a big challenge, but only with strong partnerships like the one BirdLife has with the Birdfair can we make it more possible.'

Record numbers of wintering 'Spoonies' counted in China

Record numbers of the Critically Endangered Spoon-billed Sandpiper *Calidris pygmeus* have been discovered wintering in China. On 30th December 2015, Hong Kong Bird Watching Society volunteers Jonathan Martinez and John Allcock found at least 30 'Spoonies' near the Fucheng Estuary in southwest Guangdong Province. This was the highest number ever found in China during winter – but the record did not even last a month. At the end of January further coordinated counts in Guangdong Province logged at least 45 individuals in four locations, with Fucheng Estuary having the highest count (38 individuals). Seven of the Guangdong birds were marked with coloured leg flags or rings.

'As most of the individual birds found here are marked in Russia, it is becoming very important for cooperative conservation work along the lines of the bilateral agreement on migratory birds signed by China and Russia, for which SBS is the key model species,' said the Chair of the Spoon-billed Sandpiper Task Force, Evgeny Syroechkovskiy.

The global population of the Spoon-billed Sandpiper numbers fewer than 400 adult birds. A large proportion were already known to use coastal wetlands in China while on passage between breeding grounds in Russia and principal wintering quarters in Bangladesh and Myanmar. Evgeny Syroechkovskiy again: 'This newly discovered wintering location is the third biggest in the world. This again proves the exceptional importance of China for the survival of this Critically Endangered species.'

Could anglers save the Common Scoter?

Of all the research projects carried out by RSPB Scotland, perhaps one of the most puzzling has been the case of a disappearing duck: the Common Scoter *Melanitta nigra*. Common Scoters are rare breeding birds that have been dwindling in numbers in the UK, but researchers could not pinpoint why. There is plenty of suitable habitat for this species in Scotland, but it is found at only a few locations in the Scottish Highlands, including the Flow Country of Caithness and Sutherland and at several lochs in Inverness-shire.

Concern among conservationists that this species may become locally extinct prompted a three-year research project by the RSPB's Centre for Conservation Science. The team now believes that a solution to the birds' recovery might be found by restoring the balance between fish and invertebrates in scoter habitat, and in some cases, angling could be one way to help to restore the Common Scoter population.

Mark Hancock, from the RSPB's Centre for Conservation Science said: 'Of all the lochs we investigated during this work, scoters bred most often at those with the shallowest water and the most large, freshwater invertebrates. It soon became clear that there were more insects where there were fewer Brown Trout *Salmo trutta*, so it looks like scoters are being limited by a lack of food in places where the fish are eating it all.

'We're now using these results to design new ways of helping scoters. For example, in areas of the north Highlands where angling activity has dropped off and fish numbers have increased, more trout angling is potentially one way to boost freshwater insect life. At hydro lochs, where water levels are to some extent under human control, we could also aim to maximise the area of shallow water.'

Turkish Breeding Atlas

Are you going on a birding holiday to Turkey this year? If you are, your records could help with the new Turkish Breeding Atlas. Turkey is one of the most fascinating countries in the Western Palearctic for birdwatchers, with specialities including Caspian Snowcock *Tetraogallus caspius*, Caucasian Black Grouse *Tetrao mlokosiewiczi*, Brown Fish-owl *Bubo zeylonensis*, Rüppell's Warbler *Sylvia rueppelli*, Krüper's Nuthatch *Sitta krueperi*, White-throated Robin *Irania gutturalis* and Red-fronted Serin *Serinus pusillus*.

In spite of its rich bird diversity, bird studies and conservation in Turkey started only in the early 1990s. Some systematic survey work was done in smaller areas but the country as a whole has never been covered. In 2014, Turkey was invited to be an integral part of the second European Breeding Bird Atlas and a group of dedicated Turkish birders will undertake the coordination.

Over the next three years, in collaboration with the European Bird Census Council (EBCC), breeding bird information for representative squares will be collected in Turkey. Your help is needed to complete as many squares as possible in the coming years. Access to large parts of the country is still considered safe. If you are planning a birding holiday in 2016 to Turkey and are willing to contribute your data, or even better, spend three days to count one square, please contact the Turkish Atlas Team: kusatlasi@gmail.com

Cenk Polat

100. Krüper's Nuthatch *Sitta krueperi*, Turkey, November 2014.

More stadium-nesting Peregrines

They may be in the division below MK Dons, but it looks as though Crewe Alexandra may have taken the 'first Peregrine nest in a sports stadium' title. Last month N&c suggested that the nesting by Peregrines *Falco peregrinus* at the MK Dons' stadium in Milton Keynes in 2015 was a national first (*Brit. Birds* 109: 141). But county recorder for Cheshire & the Wirral, Hugh Pulsford, begs to differ: 'I read the item about Peregrines nesting inside Stadium MK with interest. However, the supposition that this is the first time urban Peregrines have nested inside a sports stadium is incorrect. Here in Cheshire, a pair bred successfully each year from 2011 to 2013 (and probably previously) at the east end of the south stand in Crewe Alexandra's stadium (The Alexandra Stadium). They nested on a ledge at the very top of the rafters in the corner and appear to have gone largely unnoticed, although there were rumours that some ground staff knew of their presence and "tidied away" the feathers and other debris that accumulated below the nest. Unfortunately, the birds moved on and were not recorded breeding there subsequently. I also doubt they witnessed much good football, given Crewe's League One performances!'

African Bird Club AGM

The Annual Meeting and AGM of the African Bird Club www.africanbirdclub.org will be held on Saturday 16th April at The Flett Theatre, Natural History Museum, Cromwell Road, London SW7 5BD. The meeting is open to members of ABC and non-members. Admission is free to members, but donations from non-members are invited.

New county bird recorder

West Yorkshire Andy Jowett, e-mail jowett.a@sky.com

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Kittiwake declines extend to southern England and beyond:

an update on colonies at the southern edge of the species' Northeast Atlantic range

Thalassa McMurdo Hamilton, Andy Brown and Leigh Lock

Abstract Kittiwake *Rissa tridactyla* numbers declined across Britain & Ireland by 63% between 1986 and 2014. While the main focus of recent research has been on the causes of decline in large, northern colonies, losses towards the southern edge of the species' range have been no less worrying. Since the 1985–88 Seabird Colony Register, 58% of colonies in Kent, Sussex, Dorset, Devon, Cornwall and the Isles of Scilly have been abandoned. Numbers at remaining colonies have declined by 66% since the 1998–2002 Seabird 2000 survey. Breeding success across the region has been exceptionally poor, far below that required to maintain population size. Colonies elsewhere at the southern edge of the species' European range have also been abandoned or are declining, and modest increases around the southern North Sea and the Irish Sea fail to balance the losses. There is an urgent need for better annual productivity and population monitoring, and for a new national census.

Introduction

The numbers of Kittiwakes *Rissa tridactyla* breeding around the coastlines of Britain & Ireland are internationally important, and account for some 13.8% of the biogeographic population after a spectacular increase in numbers during the twentieth century (Mitchell *et al.* 2004). During this period, there was also an expansion of the species' breeding range, including in southern England. While Kittiwakes have bred in Cornwall, on the Isles of Scilly and on Lundy (Devon) since the nineteenth century (Penhallurick 1969), they first colonised and bred on the Devon mainland in 1930, Dorset in 1944, Kent in 1967 and Sussex in 1976, with numbers increasing substantially in these counties thereafter. Kittiwakes have not nested in Hampshire and they have been occasional to rare nesters on the Isle of Wight, with the only 'recent' records being of eight Apparently Occupied Nests (AON) found during the 1969–70 Operation Seafarer surveys.

The Kittiwake population in Britain & Ireland is now declining at an alarming rate and the species was Red-listed by the most recent Birds of Conservation Concern review (Eaton *et al.* 2015). Numbers fell by 23% (from 539,645 to 415,995 pairs) between the

101. The Kittiwake *Rissa tridactyla* colony at Straight Point, Devon, June 2014.

two most recent comprehensive censuses, in 1985–88 (Seabird Colony Register) and 1998–2002 (Seabird 2000; Mitchell *et al.* 2004); and by 63% at regularly monitored colonies between 1986 and 2014 (JNCC 2015). Much attention has been focused on diagnosing the causes of the substantial loss of birds from large northern colonies (Frederiksen *et al.* 2005; Wanless *et al.* 2005), though more recently some attention has been directed to examining the causes of losses in the south (Lauria *et al.* 2012, 2013), which, proportionally, have been no less worrying. Colonies in the south of England lie towards the southern edge of the Kittiwake's global range (which extends patchily south as far as Iberia in the eastern Atlantic), and while the losses in the south are modest compared with losses overall, abundance changes at and near these range limits may well presage substantial loss of breeding range and future decline elsewhere.

This paper summarises information on the recent (since Seabird 2000) status of Kittiwakes at 45 monitored colonies in the southern coastal counties of England, using data collected from the Seabird Monitoring Programme (SMP) database. We also provide an update on the species' status elsewhere at the edge of its range, in the Channel Islands, France, Iberia, the Netherlands, Germany and Denmark.

Recent trends in Kittiwake numbers in southern England

Table 1 provides a summary of the status of Kittiwakes in all southern English colonies in 2007–13. Most colonies were counted at least once during this period, with several being the subject of targeted surveys carried out by the authors in 2007. Yet monitoring at these colonies has been patchy, since only the colonies on the Isles of Scilly were surveyed annually and only a further three sites, in Kent and Dorset, were surveyed in three or more years. To allow for this, we grouped the available data from the period, and then took the most recent count from the SMP database for comparison with data from 1998–2002. Notwithstanding this incomplete coverage, the major trends are clearly evident. Overall, the population within the study area has decreased from 6,128 pairs in 1998–2002 to 2,108 pairs in 2007–13 – a decline of 66%. Fig. 1 shows that numbers in all counties except Sussex (where numbers have increased) have declined markedly since Seabird 2000. Kent has suffered the largest losses (-98%), with every indication that the Kittiwake may well be lost as a breeding species in that county very soon. The Isles of Scilly have sustained heavy losses for some time: numbers there declined by 77% between the Seabird Colony Register and Seabird 2000, with a further decline of 79% since then.

While these data show an overall pattern of decline and colony abandonment since Seabird 2000, seven colonies have bucked that trend and increased in size (table 1). These are Seaford (Sussex); Berry Head (Devon) and five in Cornwall: Godrevy Head to St Agnes, Carvannet to Portreath 3, North Cornwall 3, Rinsey and Trewavas. Turk's Head (St Agnes, Scilly) was colonised in 2009 and numbers there are currently increasing. However, the increase in numbers at these sites comes nowhere near to compensating for the losses elsewhere.

When comparing counts from individual colonies, there is always the possibility that stochastic events (such as mass desertions) influence the results unduly. In this instance, however, the near-complete (1986 to present) runs of count data for six of the colonies in the study area (fig. 2) indicate that the figures in table 1 are representative of the long-term declines at these sites. Numbers began to decline as early as 1991 on Scilly and in Devon, and from around 1998 in Kent. However, many of the steeper declines (those where numbers are now below the 1986 SMP baseline population) appear to have occurred since Seabird 2000.

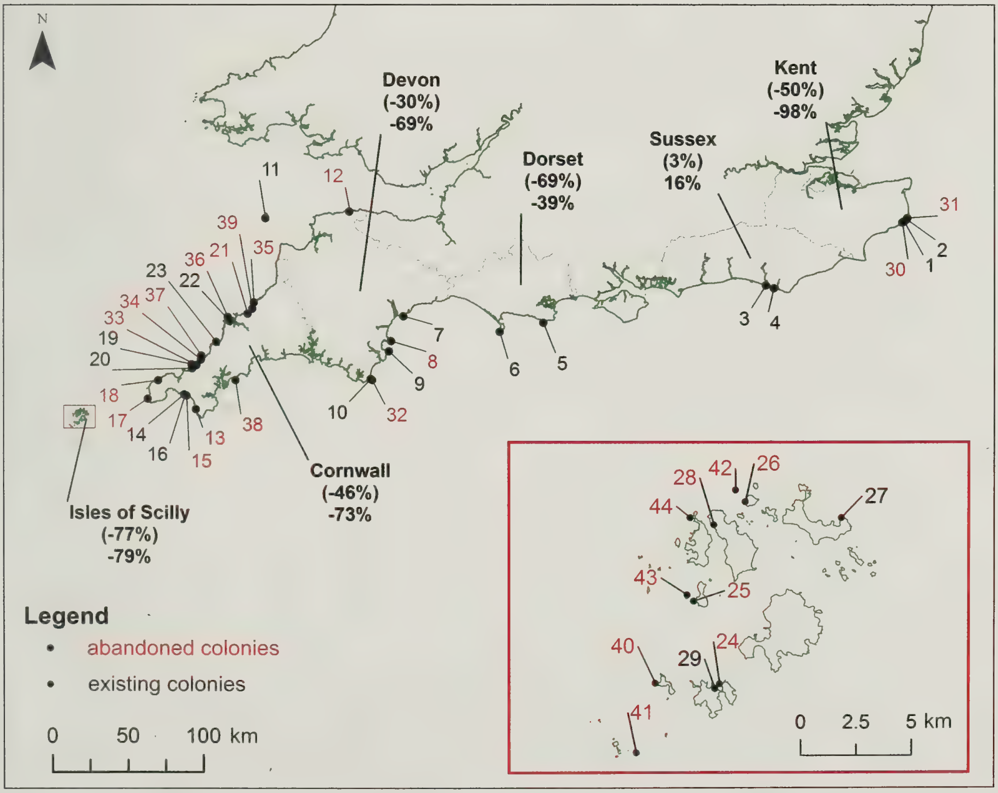

Fig. 1. The decline (%) in Kittiwake *Rissa tridactyla* numbers in southern England: for each county, percentages in parentheses denote the losses between the Seabird Colony Register and Seabird 2000 counts (JNCC estimates); percentages outwith parentheses denote losses between Seabird 2000 and 2007–13 (this paper). The numbered points approximate to the location of individual colonies and refer to the numbers given in table 1 (1–29), or to colonies abandoned before Seabird 2000: 30 Langdon Cliff, 31 Hope Point, 32 Start Point, 33 Portreath to Porthtowan, 34 Tubby's Head to St Agnes, 35 Tintagel Cliffs, 36 Gulland Rocks, 37 Bawden Rocks, 38 Gull Rock/Veryan, 39 Tregonnick Tail, 40 Annet, 41 Gorregan, 42 Men-a-Vaur, 43 White Island, 44 Shipman Head, Bryher.

Table 1. Kittiwake *Rissa tridactyla* counts and trends in numbers at colonies in southern England during Seabird 2000 (1998–2002) and in the period 2007–13. Map no. relates to fig. 1.

map no.	county	colony (SMP site name)	max. count 1998–2002 (AON)	year	most recent count 2007–13 (AON)	year	trend from 1998–2002 to most recent count (%)
1	Kent	Fan Bay	842	1998	35	2007	-95.84
2	Kent	St Margaret's	1,096	1999	3	2009	-99.73
		TOTAL	1,938		38		-98.04
3	Sussex	Peacehaven to Newhaven 2	180	1999	30	2011	-83.33
4	Sussex	Seaford to Cuckmere Haven	822	1999	1,128	2011	37.23
		TOTAL	1,002		1,158		15.57
5	Dorset	St Aldhelm's Head to Durlston Head	55	2001	27	2013	-50.91
6	Dorset	Portland 5	20	2000	19	2010	-5.00
		TOTAL	75		46		-38.67
7	Devon	Straight Point, Exmouth	165	2000	130	2013	-21.21
8	Devon	Ore Stone, Torbay	11	2001	0	2008	-100.00
9	Devon	Berry Head 1	31	2000	34	2012	9.68
10	Devon	Hallsands (North Hallsands)	495	2000	13	2011	-97.37
11	Devon	Lundy	237	2000	127	2013	-46.41
12	Devon	Lynton to Elwill	29	2001	0	2008	-100.00
		TOTAL	968		304		-68.60
13	Cornwall	Mullion/Predannack	100	1999	0	2008	-100.00
14	Cornwall	Rinsey	74	2000	76	2012	2.70
15	Cornwall	Trempar	5	2000	0	2011	-100.00
16	Cornwall	Trewavas	12	2000	21	2012	75.00
17	Cornwall	Land's End 1	244	1999	0	2008	-100.00
18	Cornwall	Morvah	133	1999	0	2011	-100.00
19	Cornwall	Godrevy Head to St Agnes	11	NA	14	2007	27.27
20	Cornwall	Carvannet to Portreath 3	11	2000	14	2007	27.27
21	Cornwall	Tresungers Point	38	1999	0	2011	-100.00
22	Cornwall	North Cornwall 3	72	2000	302	2011	319.44
23	Cornwall	Towan Head	1,164	2000	76	2012	-93.47
		TOTAL	1,864		503		-73.02
24	Scilly	Gugh	155	1999	0	2011	-100.00
25	Scilly	Samson	38	1999	0	2010	-100.00
26	Scilly	St Helen's	7	1999	0	2011	-100.00
27	Scilly	Burnt Hill & Daymark, St Martin's	27	1999	21	2013	-22.22
28	Scilly	Gimble Porth, Tresco	54	1999	0	2010	-100.00
29	Scilly	Turk's Head, St Agnes	0	1999	38	2013	n/a
		TOTAL	281		59		-79.00
		GRAND TOTAL	6,128		2,108		-65.6

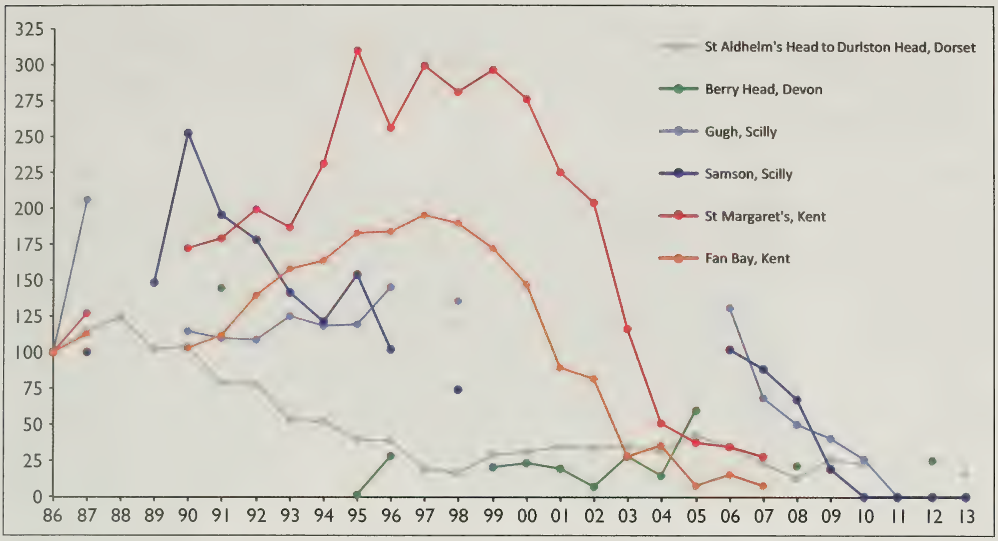

Fig. 2. Population index for Kittiwake *Rissa tridactyla* Apparently Occupied Nests counted at selected colonies along the south coast of England between 1986 and 2013. Baseline population set at 100 in 1986 for all colonies except Samson, for which the index starts at 100 in 1987.

Colony loss

Of the 45 colonies in the study area known between 1985 and 1999, 26 (58%) have been abandoned of which 11 have been abandoned since Seabird 2000 (fig. 1), contributing to a 10% contraction in the national range between 1968–72 and 2007–11 (Balmer *et al.* 2013). Although no clear geographical pattern is apparent, the highest proportion of abandonment has occurred at colonies adjacent to the Celtic Sea, particularly on Scilly and along the north coast of Cornwall (fig. 1). There is good evidence that failed breeders tend to prospect nearby colonies, seemingly to gather information about the breeding success of conspecifics, and this may affect future site fidelity (Boulinier *et al.* 2008). This may lead to the loss of smaller colonies as birds move to sites where breeding performance is better, although our data do not provide evidence of this. While it remains possible that birds have simply moved and established colonies elsewhere in the UK or farther afield, we believe this is unlikely, since the large stretches of coastline in the southern coastal counties have been surveyed at least once since 2007 and others are well watched, so any new colonies are likely to have been detected, at least in the UK. If the birds have not redistributed, they could be attending colonies as non-breeders or may have perished. However, it remains a possibility that they might re-establish at abandoned colonies, highlighting the urgent need for a repeat national census.

Changes in productivity

While the long-term effects of environmental change are reflected in abundance data, annual productivity data can provide a more immediate indicator of environmental change and help us to understand the drivers of observed trends. Poor productivity often indicates that there is an issue with predation, poor weather and/or limited food availability. Productivity data have been collected from 16 colonies in the region since 2006 (table 2), though the frequency with which estimates have been made is patchy.

The data in table 2 show that the productivity of Kittiwakes has been exceptionally poor over much of the last decade in the region, and this will almost certainly have contributed to the recent decline in colony size. Interestingly, productivity at many of the colonies on Scilly was zero for many years prior to their abandonment. The Turk's Head colony on St Agnes bucks the general and specific Scilly trend and numbers there have grown suddenly, highlighting local variation in trends. This might suggest that large-scale drivers such as climate and its impact on food availability are not responsible for all

Table 2. Estimates of Kittiwake *Rissa tridactyla* productivity from colonies in southern England. Estimated productivity shown as number of chicks fledged per pair, with sample size (Apparently Occupied Nests) in parentheses. Shaded cells indicate zero productivity, italics no breeding attempts, – indicates no data.

colony	2006	2007	2008	2009	2010	2011	2012	2013
Gugh, Scilly	0 (131)	0 (69)	0 (50)	0 (41)	0 (26)	*0 (0)*	*0 (0)*	*0 (0)*
Gimble Porth, Tresco, Scilly	0 (37)	0 (39)	0 (30)	0 (29)	*0 (0)*	*0 (0)*	*0 (0)*	*0 (0)*
St Helen's, Scilly	0 (36)	0 (31)	0 (35)	0 (18)	0 (2)	*0 (0)*	*0 (0)*	*0 (0)*
Samson North Hill, Scilly	0 (25)	0 (26)	0 (21)	0 (9)	*0 (0)*	*0 (0)*	*0 (0)*	*0 (0)*
Samson South Hill, Scilly	0 (22)	0 (15)	0 (10)	*0 (0)*	*0 (0)*	*0 (0)*	*0 (0)*	*0 (0)*
Daymark, St Martin's, Scilly	0 (15)	0 (21)	0 (27)	0 (22)	1.11 (47)	0 (69)	0 (54)	0 (21)
Turk's Head, St Agnes, Scilly	–	–	–	1.00 (1)	2.00 (1)	1.8 (5)	0 (24)	0.95 (38)
St Mark's, Lundy	–	0.35 (106)	0.12 (123)	0.17 (106)	0.65 (112)	0.51 (112)	0.29 (100)	0 (11)
Grand Fall Zawn, Lundy	–	–	0.29 (14)	0.68 (28)	0.76 (33)	0.21 (38)	0.17 (41)	0.51 (53)
Long Roost, Lundy	–	0 (13)	0 (7)	0 (3)	–	–	–	–
Rinsey Head, Cornwall	0.61 (103)	0.45 (114)	0.5 (114)	0.51 (128)	–	–	0.29 (76)	–
Towan Head, Cornwall	0.67 (67)	0.48 (105)	–	0.14 (117)	–	–	–	0.42 (71)
Old Dane, Cornwall	–	0.28 (46)	–	0.25 (36)	–	–	0.16 (76)	–
St Aldhelm's Head to Durlston Head, Dorset	–	0.6 (37)	–	0.1 (41)	0 (?)	–	0.38 (25)	0.09 (27)
Straight Point, Devon	–	–	0.3 (141)	0.94 (84)	0.42 (89)	–	–	0.59 (70)
North Hallsands, Devon	0 (79)	0 (15)	–	1.00 (5)	–	–	–	–

breeding failures (at least not in more recent years), since all birds breeding on Scilly should in theory be able to access the same fishing grounds and the same prey. This leads us to believe that, although initial colony decline (and the wider decline in general) may be prey-related (and certainly there is evidence of this on Scilly in 2006–07; Heaney *et al.* 2008), small and fragmented colonies may become susceptible to small-scale, local drivers such as disturbance and predation.

Two studies have attempted to calculate a productivity figure that would ensure a stable Kittiwake population (assuming survival remains the same). Frederiksen *et al.* (2004) suggested that the population on the Isle of May would need to achieve a productivity of 1.17 young/AON per year to stabilise the population, while Cook & Robinson (2010) concluded that productivity of 1.5 young/AON per year would be required to stabilise national breeding numbers, and that the mean productivity of 0.68 young/AON per year observed across 54 UK colonies between 1986 and 2008 would lead to a 25% reduction in population over 25 years. Fig. 3 and table 2 show that most of the colonies in the south of England are not performing anywhere near the required levels. Of the 88 productivity figures available across the 12 sites in our southern England study area between 1986 and 2013, only seven reached or exceeded the Frederiksen level of productivity, and of these just one exceeded the

Cook & Robinson threshold. All of these seven instances occurred between 1995 and 1998 – around 20 years ago. We thus anticipate further decline and colony abandonment in the southern coastal counties of England.

The causes of decline

A decline in food availability is often held responsible for reduced Kittiwake productivity, yet much of the evidence for this comes from studies of North Sea colonies, where Lesser Sandeels *Ammodytes marinus* comprise up to 87% of Kittiwake diet, and where sandeel availability influences productivity and adult survival (Oro & Furness 2002; Daunt *et al.* 2008). Sandeel abundance declined in parts of the North Sea in 1986–2013 (ICES 2014) and adult size (length-at-age) and larval length and weight are also declining (Edwards *et al.* 2011; van Deurs *et al.* 2013). Moreover, in some years, sandeel lipid content has been so low that it has also affected Kittiwake breeding success (Wanless *et al.* 2007). The mechanisms underlying change are likely to be complex and the various factors involved may be additive in their effect. For example, while industrial sandeel fisheries in the North Sea during 1990–98 consistently had a significant negative effect on Kittiwake productivity through reduced sandeel availability (Frederiksen *et al.* 2004; Cook *et al.* 2014), it is possible that this was exacerbating more significant, climate-driven changes in the marine food web, associated with changing sea temperatures and the timing and strength of ocean stratification (Beaugrand *et al.* 2003; Scott *et al.* 2006; Frederiksen *et al.* 2007; van Deurs *et al.* 2009; Scott *et al.* 2010).

Current predictions suggest that conditions will become increasingly unfavourable for breeding Kittiwakes around the boreal Northeast Atlantic in future (Frederiksen *et al.* 2013; Carroll *et al.* 2015). The relationship between prey availability and quality, and their impact on Kittiwake abundance and productivity in southern England, where birds are thought less likely to depend on sandeels than farther north, requires further study. Yet there is a dearth of seabird dietary data from colonies in this region, and while sea surface temperatures are rising in the Celtic Sea and the English Channel, the abundance of larval forage fish appears to be fluctuating without a strong trend and there is currently no evidence that these factors are linked to Kittiwake breeding success (Lauria *et al.* 2012, 2013). It may be that productivity in the south is affected by other factors, such as ephemeral changes in currents, frontal system patterns, weather conditions, disturbance or predation, as in northern colonies (e.g. Heubeck *et al.* 1997, 1999, Votier *et al.*

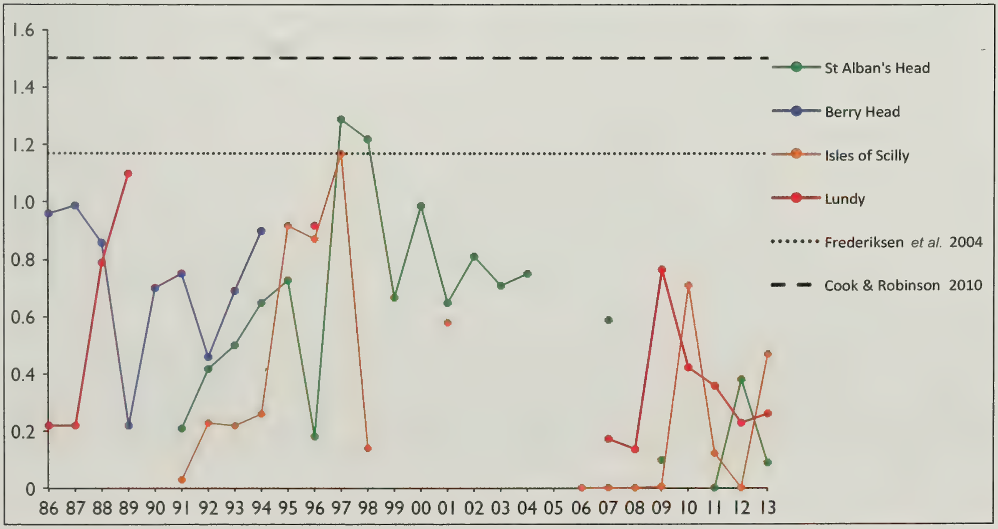

Fig. 3. Kittiwake *Rissa tridactyla* breeding success (number of chicks fledged/AON) 1986–2013 at selected sites in southern England. The figure also shows two different estimates of minimum productivity needed to reverse declines and sustain populations (Frederiksen *et al.* 2004; Cook & Robinson 2010).

2008). A study of the small but currently expanding Turk's Head colony on St Agnes might be instructive given that trends there contrast with those over much of our study area.

Some may argue that the recent decline in numbers is a return to the species' 'natural baseline', a predictable 'correction' after the surge in numbers in the last century. In truth, we have little idea of what the 'natural baseline' for this species is. Indeed, before the well-documented increases in the early part of the twentieth century, Kittiwakes were already increasing, in common with many other seabirds, as the persecution meted out to them during the nineteenth century declined. It is also feasible that population increases were buoyed by the increasing availability of fish discards from an expanding fishing industry (Reeves & Furness 2002; Mitchell *et al.* 2004) and hence that population declines could be exacerbated by the more recent reduction in discarding activity. Discards may be especially important for Kittiwakes when availability of forage fish (such as sandeels) is low and natural prey populations are in poor condition (Reeves & Furness 2002; Bicknell *et al.* 2013). The ban on discarding activity to be introduced in 2016 in Common Fisheries Policy may therefore have a disproportionately large effect on seabirds in the coming years, yet the size of the impact will vary with the future management of fisheries (Heath *et al.* 2014).

The wider picture

Beyond the southern English coastal counties, Kittiwake population trends are mixed (fig. 4). In Pembrokeshire, Kittiwake numbers on Skomer, numerically the most important colony in Wales, were buoyant at the time of the Seabird 2000 surveys and 2,257 AON were recorded in 2000. They remained at this level until 2008 (2,282 AON) but since then they have fallen sharply and only 1,045 AON were counted in 2013, a decline of 54% in just five years. The equivalent losses at Ramsey Island have been of an even greater magnitude (-70%). In contrast,

Chris Townend

102. Kittiwakes *Rissa tridactyla* at the Straight Point colony, Devon, 4th August 2014. The ringed juvenile in the centre of the picture fledged two weeks earlier from the French colony at Pointe du Raz, Finistère, Bretagne. It hatched on 10th June and fledged on 20th July 2014, and was last seen attending the nest site at Pointe du Raz on 23rd July. More typically, juveniles stay around the nest site for up to two weeks after fledging, but this individual looks in good condition in Devon.

numbers on Grassholm and St Margaret's Island have increased substantially, though not coming close to compensating for the losses elsewhere. On the south coast of Ireland, the three large colonies for which data are available are all in decline. For example, the population at Ram Head, Co. Waterford, has declined by 75% in nine years, from 522 AON in 1999 to 128 AON in 2008.

There are, or have recently been, Kittiwake colonies to the south and west of Britain & Ireland in Spain, France and the Channel Islands, and to the east in Denmark, Germany and the Netherlands. The data available from these colonies suggests that the outlook is bleak for Kittiwake populations at the southern edge of their European range. The species is on the verge

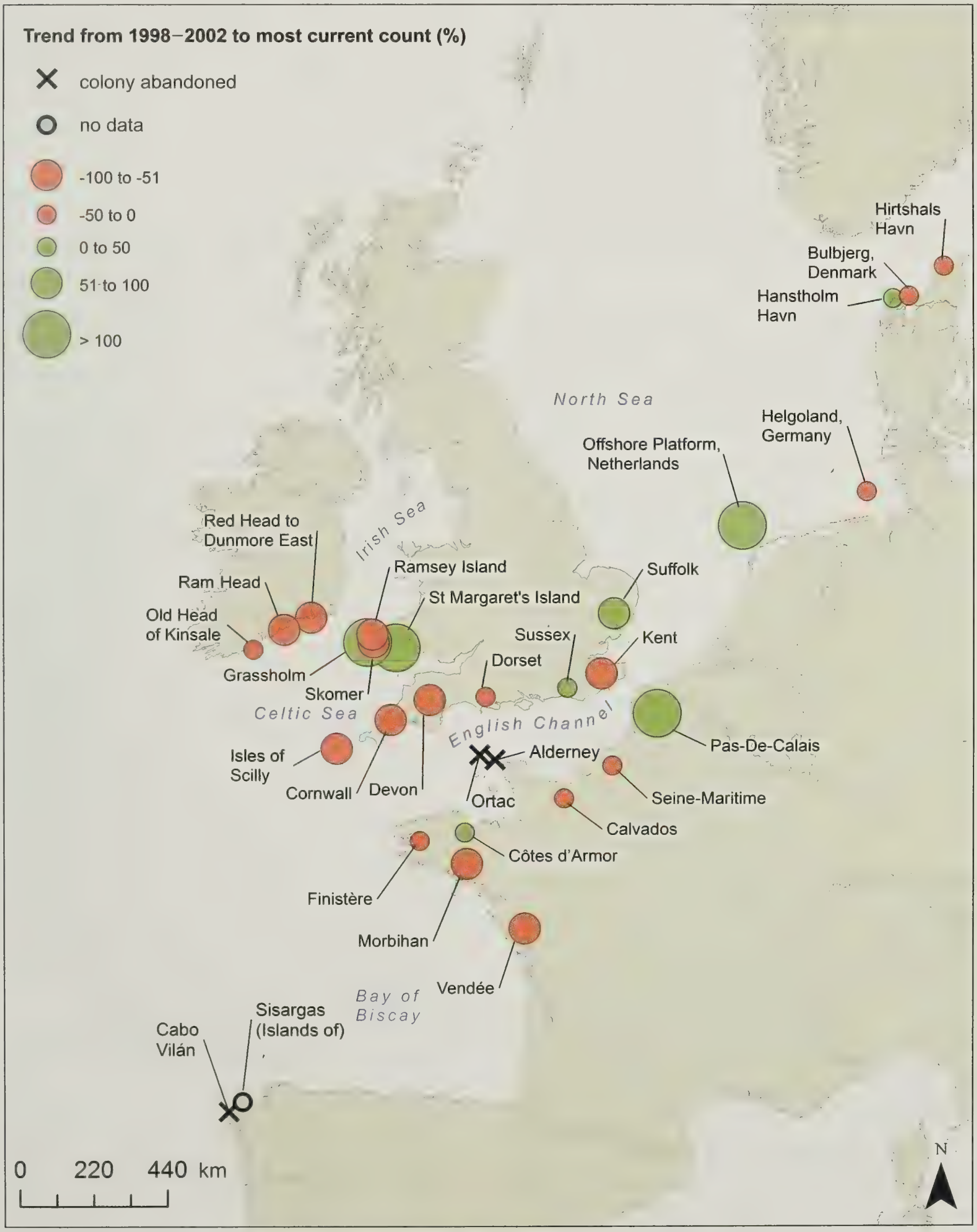

Fig. 4. Kittiwake *Rissa tridactyla* population declines (%) in the wider study area (southern North Sea and Irish Sea, Celtic Sea, English Channel and Bay of Biscay) between 1998–2002 and 2007–13.

of extirpation from Spain: of two colonies that together held over 200 pairs until the mid 1990s, one has been abandoned since 2012 and the other held just two nests in 2013 (A. Barros pers. comm.). In France, numbers declined by 10% from approximately 5,694 pairs in 1997–2000 to 5,132 pairs in 2009–11 (Cadiou 2011). This relatively small reduction has coincided with a significant change in distribution, with colonies in all but one region declining. The southernmost French colonies have decreased the most, dwindling to fewer than 10 AON in the regions of Vendée and Morbihan; whereas colonies in Pas-de-Calais have increased by 175% from 743 AON in 2000 to 2,045 AON in 2009 (Cadiou 2011). Kittiwakes no longer breed in the Channel Islands, being lost from Ortac in 1992 and from Alderney in 2000.

In contrast, there is evidence of colony expansion in the southern North Sea, towards the eastern edge of the species' range. Kittiwakes have nested in increasing numbers at Lowestoft, Suffolk, since colony establishment in 1958 (two pairs): the colony exceeded 100 pairs by 2004 and in 2012 it held 169 pairs. In 1995, Kittiwakes also began nesting to the south, on the Sizewell Rigs (disused structures associated with the nearby nuclear power station); numbers first exceeded 200 pairs in 2001 and reached 502 AON in 2008. More recent estimates suggest that at least 400 pairs continue to nest on the rigs. The current population is space-limited and is unlikely to exceed about 500 pairs, notwithstanding the issue that the rigs will eventually be dismantled (T. Howe pers. comm.). Farther east still, in 2000, Kittiwakes colonised oil and gas platforms 65 km northwest of the coast of Texel, the Netherlands, in the Frisian Front area (southern North Sea), where feeding is reportedly good. By 2006, numbers had climbed to 40 AON: birds bred on three out of nine platforms visited and a further 291 adults were prospecting at six platforms (Camphuysen & de Vreeze 2005; Camphuysen & Leopold 2007). In Germany, Kittiwakes recolonised the single colony on Helgoland in 1938, and the population has risen slowly; it reached a maximum of 8,600 pairs in 2001 but has since declined (Markones *et al.* 2009). In 2013, 5,931 pairs bred (O. Hüppop pers. comm.). There is one main colony in Denmark, at Bulbjerg, in Thy. It held 430–500 pairs in 1999–2000 and 324 pairs in 2014 (T. Bregnballe unpubl. data). It is thought to be stable, with a low but constant survival rate. There is no evidence here that there are the same food shortage problems as in the northern North Sea, and no relationship between sea surface temperature and survival has been found (Lerche-Jørgensen *et al.* 2012). The complexity of the population changes around Europe may suggest that these populations are part of a large metapopulation, or more simply they could be a reflection of the variation in oceanic habitat around this area.

Conclusions

Kittiwake numbers in southern England are declining at an alarming rate. Indeed, the scale of loss between the Seabird Colony Register of 1985–88 and Seabird 2000 was matched or exceeded only by losses in part/all of the following recording areas: Cleveland (-44%), Co. Cork (-53%), Dumfries & Galloway (-91%), northeast Fife (-46%), Shetland (-69%), Strathclyde (-45%) and Yorkshire (-50%). Declines have accelerated in the period since 2002, during which the population across the southern English counties has declined by 65%. Overall, a staggering 26 colonies (58% of the total in the study area) have been lost since 1985–88, and though others have increased in size and new colonies have formed elsewhere in the species' range, the gains do not balance these losses. In addition, we fear that with productivity at monitored colonies continually far below that required to sustain them, it is likely that we will lose many more. Colonies are dwindling elsewhere at the southern limits of the Kittiwake's European breeding range, around the Bay of Biscay, Celtic Sea and the eastern English Channel. Heterogeneity in the pattern of population changes, particularly between colonies adjacent to the North Sea and the Irish Sea, makes us less clear that we are simply witnessing the southern range margin contracting northwards, as might be expected in response to climate change (Parmesan & Yohe 2003; Burrows *et al.* 2011). This is perhaps a reflection of the fact that climate change impacts at sea have been complex and can be spatially variable (Burrows *et al.* 2011) and that Kittiwakes in different regions are reliant on different sea areas.

We are hindered in our interpretation by some important knowledge gaps. Improved population and productivity monitoring of colonies would allow us to explore the factors which influence them and enable us to formulate an effective plan of action much more rapidly. We must ensure that the southern English coastal colonies – both extant and abandoned – are well covered in the next national census. We also believe that a far greater effort is required to monitor annual productivity for each occupied colony, and that it is essential to continue or reinstate annual population and productivity monitoring at the following key sites: St Margaret's Bay (Kent), Seaford to Cuckmere Haven (Sussex), St Aldhelm's Head to Durlston Head (Dorset), Straight Point and Lundy (Devon), Rinsey, North Cornwall 3 and Towan Head (Cornwall), and in the Isles of Scilly archipelago. Support from local volunteers and ringing groups could be integral to such an initiative. This, combined with dietary studies and studies of adult survival in this region, may enable us to identify the actions we need to take to halt and reverse the continuing decline of the Kittiwake.

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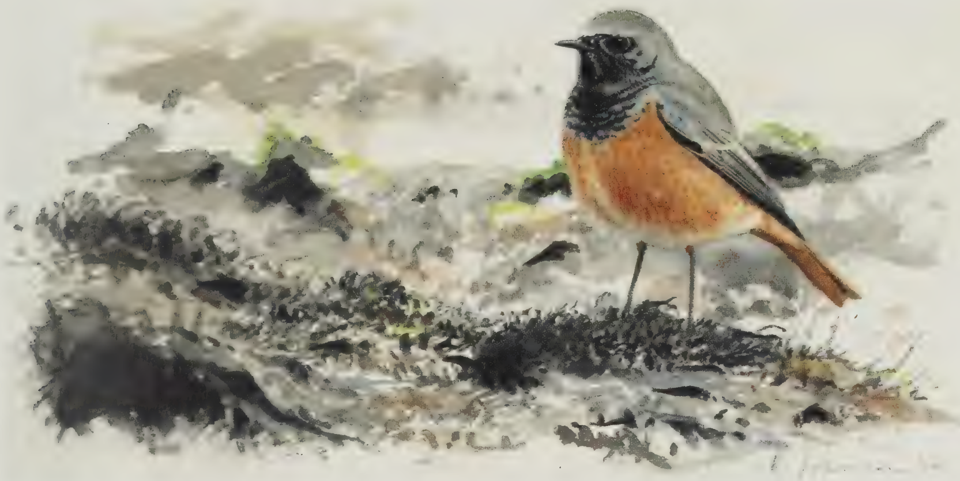
'Eastern Black Redstart' – new to Britain

Andy Stoddart, on behalf of BBRC



Richard Johnson

Abstract An orange-bellied male Black Redstart *Phoenicurus ochruros* at Dungeness, Kent, in November 1981 was originally accepted by BBRC as being of an eastern subspecies but a subsequent BOURC review led to the rejection of all four records then accepted and the removal of any eastern subspecies from the British List. This paper charts our developing knowledge of the appearance and vagrant status of 'Eastern Black Redstart' and the ultimate reinstatement of the Dungeness bird as the first British record of the Asian subspecies group *phoenicuroides/rufiventris/ xerophilus.*

The discovery

On 7th November 1981, L. M. Wickins found what he considered to be a Common Redstart *Phoenicurus phoenicurus* just outside Dungeness Bird Observatory, Kent. He mentioned the bird to the observatory warden, Dorian Buffery (DB), who, in view of the late date, went to have a look.

DB found an intriguing-looking bird with a dark throat and upper breast contrasting with striking orange underparts. It was indeed similar to a Common Redstart but appeared to be a Black Redstart *P. ochruros*, although not a typical western bird *P. o. gibraltariensis.* A number of others present at the observatory also saw the bird and there was general confusion as to its identity. Eventually, after some effort, the bird was trapped and a full examination was carried out by DB; the late Peter Grant (PJG) was among those present and assisting with proceedings.

In the hand, the wing length was measured at 84 mm and the wing formula was judged to be that of a Black rather than a Common Redstart according to the details given in Svensson (1975; see also Svensson 1992). The bird was ringed, sexed as a male and, with moult contrast in the greater coverts, aged as a first-winter. It was apparently of the '*paradoxus*' type (an adult-like plumage acquired by some males in their first autumn). Some photographs were taken of the bird while it was still in the hand, after which it was released. It was still present near the observatory the following day.

The initial submission

With reference to the existing literature, notably Witherby *et al.* (1938–41), the bird was considered to be a Black Redstart of an eastern subspecies and the record was submitted to BBRC by DB. The submission contained a full 'in the hand' plumage description and details of the wing formula, together with three photographic slides of the bird in the hand (though subsequently only one slide seems to have been available for assessment).

During the record's three circulations, it was noted that the wing formula details supplied failed to establish the presence of an emargination on the sixth primary (P6, primaries numbered ascendantly), an important feature of Black Redstart (Common Redstart generally lacks an emargination on this feather). Nevertheless, the wing length and details of the primary spacing were, in combination, considered sufficient to identify the bird as a Black Redstart. Eventually, it was accepted as the third British record of an 'Eastern Black Redstart' and published as 'showing characters of one of the eastern races *ochruros/semirufus/phoenicuroides*' (Rogers *et al.* 1983). The accompanying species comment noted incorrectly that this was 'the first time that one of the eastern orange-bellied races has been recorded in Britain' but this was corrected in the following year's report (Rogers *et al.* 1984).

The two earlier accepted records involved a 'female/immature' on Bryher, Scilly, on 13th October 1975 and an adult male at Saltfleetby, Lincolnshire, on 15th–17th October 1978 (Rogers *et al.* 1980). Subsequently, a male at Donna Nook, Lincolnshire, on 21st October 1988 (but actually present on 16th–22nd) and described as 'showing characters closest to *ochruros*' was accepted and published as the fourth British record (Rogers *et al.* 1989).

The BOURC review

These four records were reviewed by BOURC in 1998–99. In the case of the 1975 Scilly bird, the notes were brief and the bird's attribution as a female/immature was contradicted by an accompanying tracing of an original sketch, which showed a male. It was considered most likely to have been a hybrid Black × Common Redstart.

The notes and colour painting of the 1978 Lincolnshire bird showed features not associated with any subspecies of Black Redstart, notably a combination of orange underparts and a prominent white wing panel. It too was judged to have been a hybrid.

As for the 1981 Dungeness bird, an analysis of the single slide now available failed to establish the presence of an emargination on P6. It was also suggested that some plumage features of the bird, such as the warm orange-buff fringes to the wing-coverts, might be more suggestive of a Common Redstart. With these uncertainties, and a crucial element of the wing formula missing, a hybrid was considered the most likely option.

The 1988 Lincolnshire bird showed orange in the lower belly, a character of *ochruros*, but also a prominent pale wing panel, which is not shown by that subspecies. Despite the view of several members that it might indeed be *ochruros*, it was felt that the possibility of a western bird with restricted orange in the lower belly, either through normal variation or through intergradation with *ochruros*, could not be excluded.

Two further claims, at Flamborough Head, Yorkshire, on 3rd October 1979 and 12th October 1991, neither accepted by BBRC, were also considered as part of the BOURC review. In both cases the notes were deemed incomplete and both were considered likely to have been hybrids.

'Eastern Black Redstart' was eventually removed from the British List (BOU 2002), a judgement influenced by correspondence with Bernd Nicolai, lead author of Nicolai *et al.* (1996). After examining the various files, Nicolai considered that the 1988 Lincolnshire bird fell within the range of variation of *gibraltariensis* but that all the other birds in the review should be regarded as hybrids (although no specific reasons for this were given).

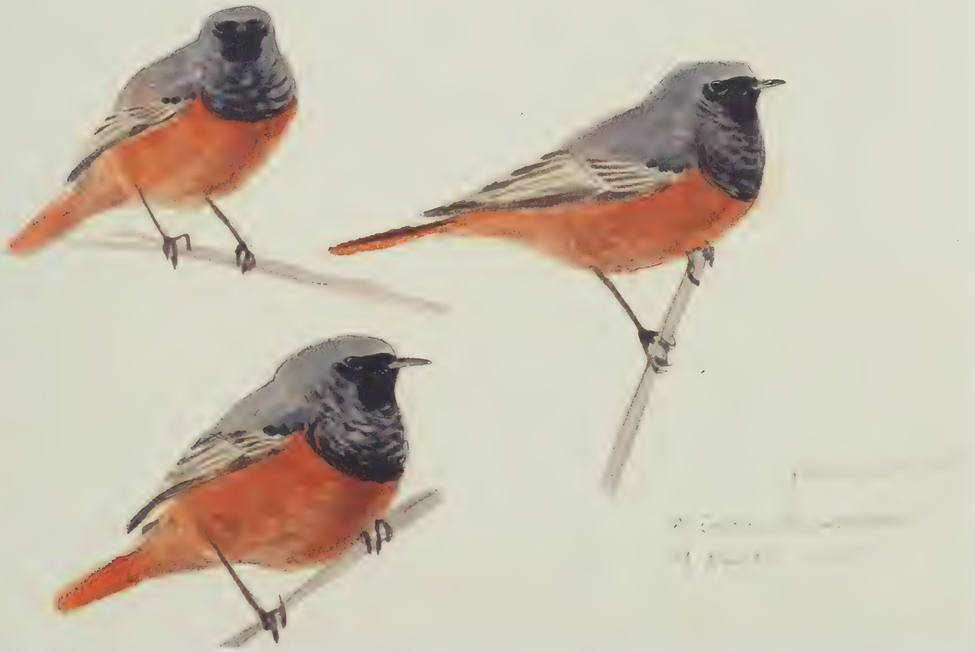
New knowledge

With the ink barely dry on the BOURC announcement, 2003 brought new insights into the appearance of 'Eastern Black Redstarts' and their status in northwest Europe. On 22nd October, a striking orange-bellied Black Redstart was found at Ijmuiden, the Netherlands (it was later established to have been present on 21st also), and then on 28th October a near-identical bird was discovered on Guernsey, in the Channel Islands. A little later, on 9th November, one was found in Britain, at Wells-next-the-Sea, in Norfolk. All were first-winter males of the '*paradoxus*' type.

Both the Dutch and the Channel Islands birds were photographed in the field and the latter was also photographed and measured in the hand. The appearance of the Dutch bird was described by Steijn (2003) and that of both the Dutch and the Channel Islands birds was subsequently documented more fully by the same author (Steijn 2005). The latter paper went on to address in some detail the identification of 'Eastern Black Redstarts' by both plumage and biometrics, covering their separation from 'Western Black Redstart', Common Redstart and, most importantly, Black × Common Redstart hybrids.

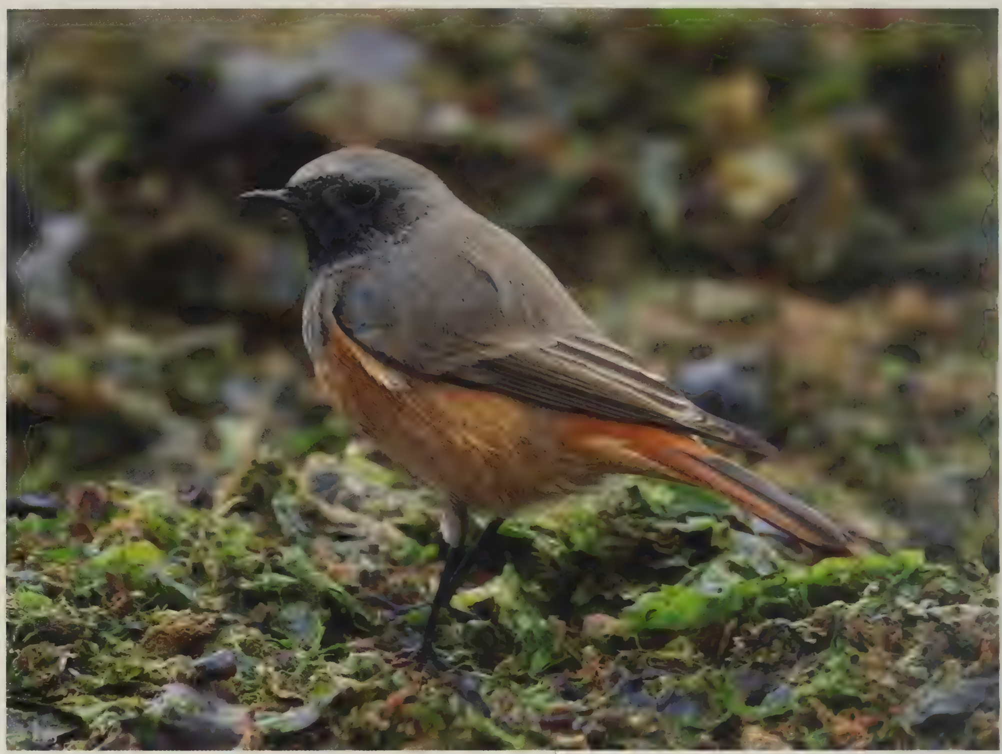
Further developments

The Dutch and Channel Islands birds were in due course accepted by their respective rarities committees but the 2003 Norfolk claim, once submitted, remained in limbo. It was well described and illustrated with paintings that showed a suite of characters fully consistent with 'Eastern Black Redstart' (fig. 1), but it had



James McCallum

Fig. 1. First-winter male 'Eastern Black Redstart' *Phoenicurus ochruros phoenicuroides/rufiventris/xerophilus*, Wells, Norfolk, November 2003. These field sketches show what was at the time a subspecies and plumage type not depicted in the popular literature. Nevertheless they show a suite of what are now recognised as first-winter male 'Eastern Black Redstart' features – a grey 'bib' covering the upper breast, brownish fringes in the wing (but no white panel) and solidly orange underparts with no white belly.


Steve Gantlett

103. First-winter male 'Eastern Black Redstart' *Phoenicurus ochruros phoenicuroides/rufiventris/xerophilus*, Margate, Kent, November 2011. Though initially reminiscent of a male Common Redstart *P. phoenicurus*, this bird shows the characteristic features of 'Eastern Black Redstart' – a grey 'bib' extending onto the upper breast, no hint of white in the forehead, no obvious white panel in the closed wing and solidly orange underparts (with no white belly) extending to the undertail-coverts. The wing formula can be read here too, the ratio of P5–P6:P6–P7 appearing to be approximately 1:2 and therefore incompatible with both Common Redstart and a Common x Black Redstart hybrid.

been neither photographed nor trapped so no biometric or genetic evidence was available. As a consequence, it was difficult for BBRC to conclusively eliminate a Black × Common Redstart hybrid and put forward a case for what would now be (in the wake of the BOURC review) a 'first for Britain'.

At BBRC's request, BOURC revisited its 'Eastern Black Redstart' review in early 2011. BOURC concluded that the review had been sound and that the photograph of the 1981 Dungeness bird showed what was probably a hybrid, while a re-examination of the bird's biometrics based on this image also supported this identification. The 2003 Norfolk bird thus remained in limbo.

Then, on 11th November 2011, a similar bird turned up at Foreness Point, in Kent (plate 103). It remained until 17th, during which time it was seen by many observers and well photographed, while on 16th November, another bird was found, this one on Holy Island, Northumberland (plate 104). This bird remained until 21st and it too was both widely admired and well photographed.

These two birds arrived as part of an unprecedented influx of 'Eastern Black Redstarts' to northwest Europe with no fewer than seven reported in Sweden and further singles in France, Germany and the Netherlands (Hunt 2011). This multiple arrival was in effect a re-run of the events of late autumn 2003, though this time more individuals were involved.

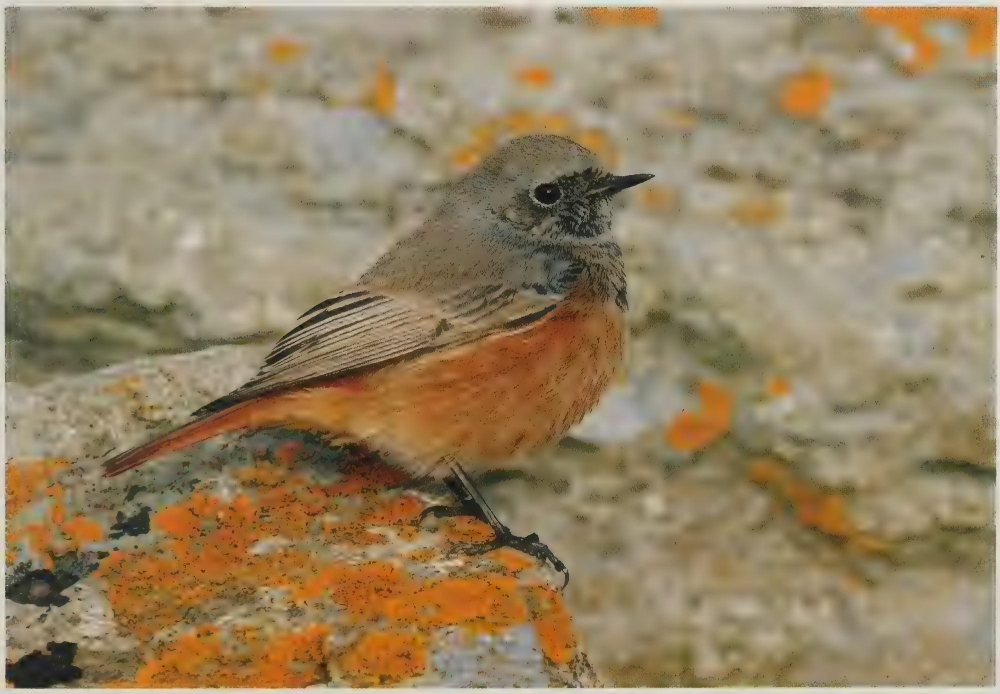
Both British birds met the identification criteria set out in Steijn (2005) and, in the context of the wider influx in northwest Europe, were accepted unanimously by BBRC on a single circulation. The plumage characters of both were a perfect match for '*paradoxus*' first-winter male 'Eastern Black Redstart' and the details of the wing formula could be established from the photographs. Furthermore, the Kent bird had provided a faecal sample which, on analysis, provided confirmation that it belonged to one of the Asian subspecies *phoenicuroides/rufiventris/xerophilus.*

Both the Kent and the Northumberland records from 2011 were sufficiently well documented to be passed to BOURC for consideration for admission to the British List but the question remained of how to deal with the 2003 Norfolk bird. In addition, there was also the question of whether to re-examine the records rejected in the BOURC review, notably the well-documented and essentially identical 1981 Dungeness bird.

A new submission

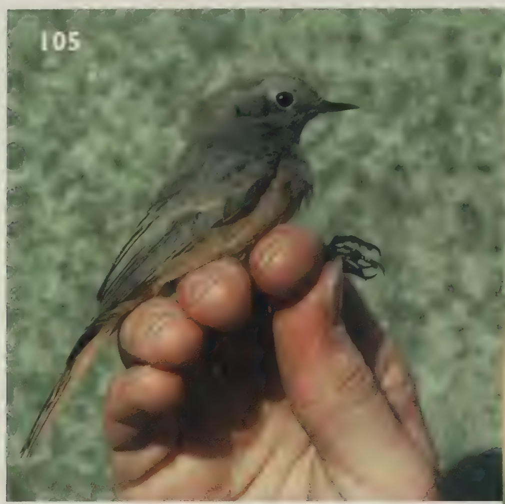
In the wake of the events described above, a new submission of the 1981 Dungeness bird was received from Brian Cox in early 2012. On 7th November 1981, Brian had been birdwatching at Dungeness with his brother Stephen and his father Howard, when they had come across the bird on the fence of the Coastguard Cottages. He was still present when it was trapped and examined in the hand and took some photographs, three of which were included with the new submission (plates 105–107).

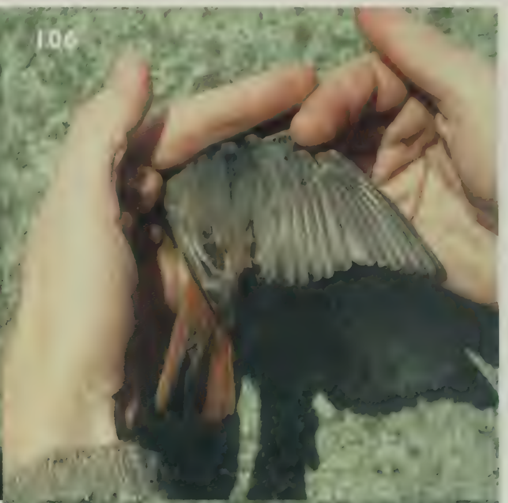
Two of these new photographs achieved second place in the 2012 Carl Zeiss Award and were published as showing a 'putative Eastern Black Redstart' (Rowlands 2012). In the meantime, detailed work on these images by BBRC had challenged the conclusion both of the original BOURC review and of its subsequent re-examination of the biometrics. The BBRC view was that the biometrics did, after all, support the identification as 'Eastern Black Redstart'. The ratio of P5–P6:P6–P7 was measured as 1:1.88, much closer to the mean given by Steijn (2005) for 'Eastern Black Redstart' (1:2.19) than that for a hybrid (1:1.33). Furthermore, judged purely by eye (as would be the case in the field), the ratio appeared to be about 1:2. Caution was required due to the relatively small sample sizes in Steijn (2005) but the analysis of the primary spacing was nevertheless considered

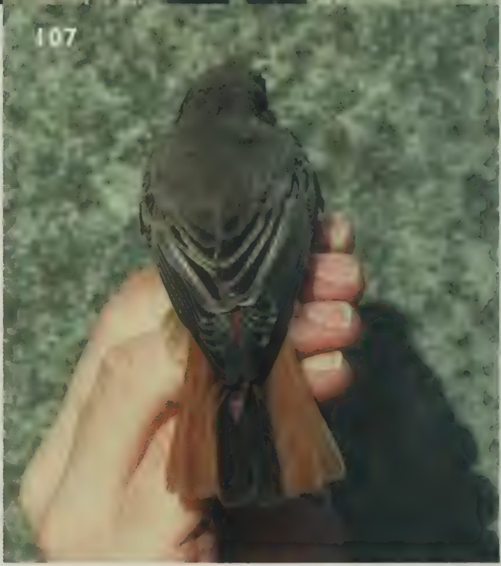


Steve Young/FLPA

104. First-winter male 'Eastern Black Redstart', Holy Island, Northumberland, November 2011. This bird is almost a carbon copy of the Kent bird in plate 103, showing the same Common Redstart-like suite of features. Particularly obvious here are the strong warm buff hues in the grey upperparts and the fringes to the wing feathers. Although these also contribute to a rather Common Redstart-like impression, they appear to be typical of fresh autumn 'Eastern Black Redstarts'.







105–107. First-winter male 'Eastern Black Redstart', Dungeness, Kent, November 1981. Plate 105 shows a grey 'bib' covering the upper breast, apparently solidly orange underparts and a closed wing lacking the white panel found on male 'Western Black Redstart'.

In plate 106, the wing-tip can be seen to be formed by P4 and P5, with P6 also quite long. Common Redstart typically has the wing-tip formed by P3 and P4, with P6 more obviously shorter. Also just visible here is a relatively long emargination on P6, diagnostic of Black Redstart (typically, the sixth primary of Common Redstart is not emarginated).

In plate 107, the primary spacing can be read on the closed wing. The longest visible feather is P5, with P6 falling a little short and then a longer gap to the tip of P7. The ratio of the tips of P5–P6: P6–P7 can be judged by eye to be approaching 1:2.

Brian Cox

to favour 'Eastern Black Redstart' rather than a hybrid.

The analysis of P6 was considered to be even more indicative of this identification. On the new images, this feather was clearly emarginated and the emargination was also long. In addition, the P4:P6 emargination ratio was 0.65, correct for 'Eastern Black Redstart' (mean 0.63) and well outside the quoted range for a hybrid (mean 0.47) (Steijn 2005).

Furthermore, given the increasingly well understood knowledge of the field appearance of '*paradoxus*' first-winter male 'Eastern Black Redstart', it was clear that the 1981 bird showed the key plumage characters: an extensive grey-and-black 'bib' covering the upper breast, uniformly deep orange underparts extending to the undertail-coverts, orange axillaries and underwing-coverts, and a lack of an obvious pale panel on the closed wing. By contrast, there were no features present indicative of a hybrid origin. Indeed, it could be argued that the newly interpreted biometrics were merely confirmation of what was now to some voters readily apparent from the photographs.

In view of the importance of the record, Laurens Steijn, author of the 2005 identification paper, was approached for his view. He was in agreement with the BBRC analysis and considered the bird a good candidate for a 'first for Britain'. The bird was therefore accepted unanimously by BBRC and the record passed to BOURC for consideration for readmission to the British List.

Reinstatement to the British List

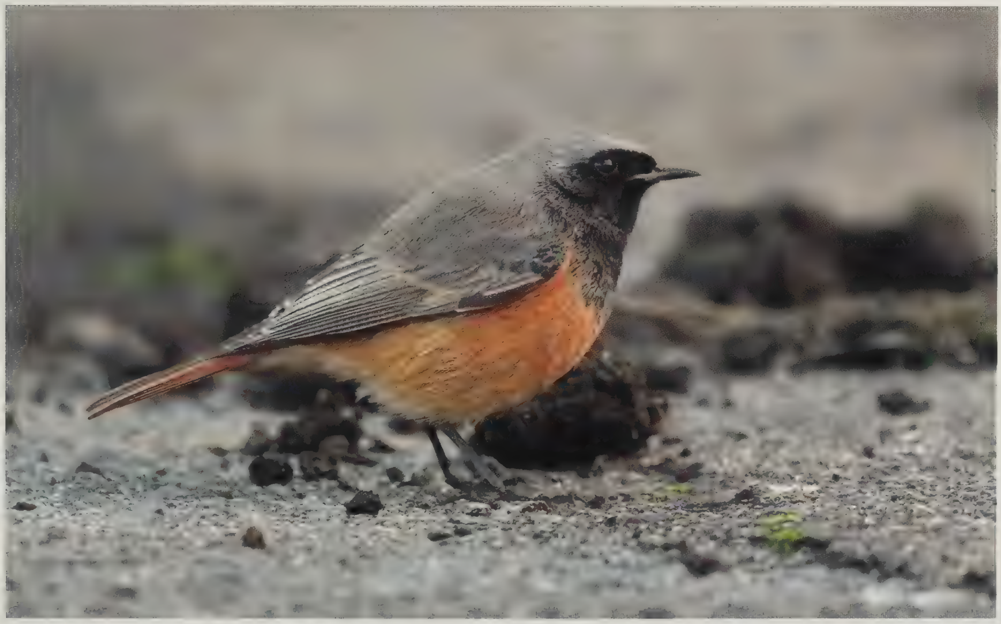
BOURC examined the file in late 2013 and early 2014. It agreed with the new biometric analysis but stopped short of accepting that it definitively ruled out a hybrid. The sample sizes in Steijn (2005) were small and it was considered that hybrids might exhibit greater variation than indicated. Nevertheless, BOURC agreed that the bird's appearance fully matched that of 'Eastern Black Redstart' with no indication of hybridisation, the date of the bird was consistent with an emerging pattern of vagrancy and the escape potential was negligible. All the strands of evidence therefore pointed to the overwhelming likelihood that the Dungeness bird was an 'Eastern Black Redstart'.

It was therefore accepted and 'Eastern Black Redstart' was readmitted to the British List (BOU 2015). While the appearance of the Dungeness bird was consistent with that of the Central Asian subspecies *phoenicuroides* (by far the most likely to reach northwest Europe), it was felt that the full extent of variation in the other subspecies was not fully understood and that an attribution to a broader subspecies group (i.e. *phoenicuroides/rufiventris/xerophilus)* was, at least for the time being, most appropriate.

The acceptance of the 1981 Dungeness bird in turn enabled the acceptance of the 2003 Norfolk bird. Now relieved of the requirement to be accepted as a 'first', it was accepted by BBRC by a 9:1 vote and published along with the 1981 Dungeness bird and the Kent and Northumberland birds from 2011 (Hudson *et al.* 2014). Then, within two months of their publication, came two more individuals (both also '*paradoxus*' first-winter males), at Newby, Yorkshire, from 29th November to 3rd December 2014 (plate 108) and on St Mary's, Scilly, from 30th November to 12th January 2015 (Hudson *et al.* 2015).

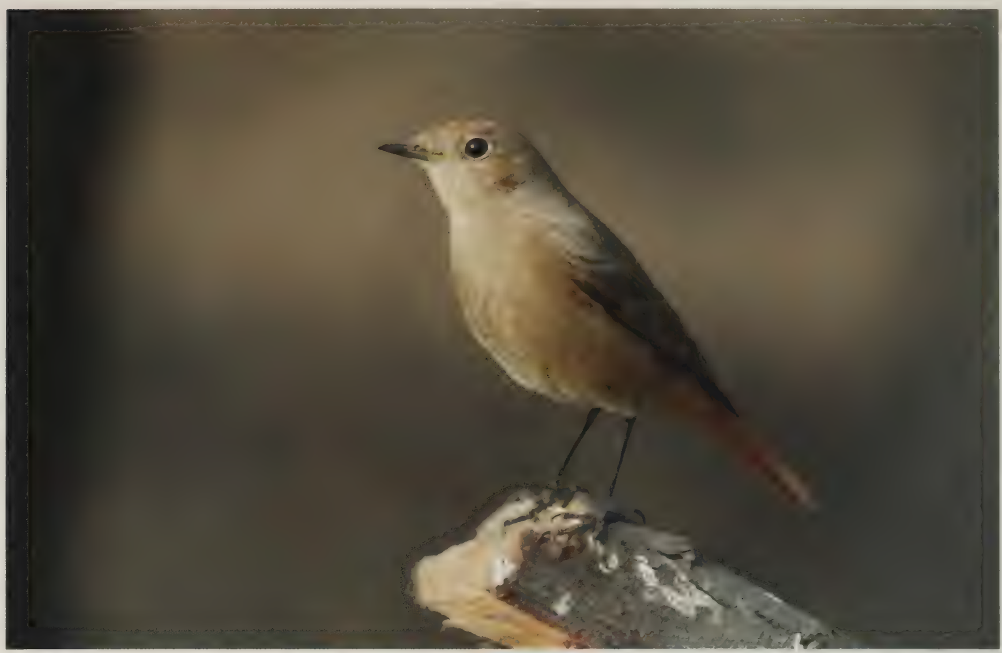
Discussion

'Eastern Black Redstart' of the subspecies *phoenicuroides* is a long-distance migrant breeding in the mountains of Central Asia and wintering in northwest India, Iran, Arabia and northeast Africa (*BWP*). Its breeding and wintering ranges and migration profile closely match those of a number of regular late-autumn vagrants such as Hume's



Graham Catley

108. First-winter male 'Eastern Black Redstart', Newby, Yorkshire, December 2014. This bird closely resembles those in 2011 but has more solid black in the lores, chin and throat. Nevertheless a subtle moult contrast can be seen in the greater coverts, and this bird is considered to have been a first-winter. Note that the emargination on P6 can be seen here as well as the P5–P6: P6–P7 ratio, both features confirming that this is a Black Redstart.



Rajesh Kalra

109. Female-type 'Eastern Black Redstart', Haryana, India, January 2016. This female-type 'Eastern Black Redstart' would be a tough identification challenge in Europe. It is reminiscent of both Black and Common Redstarts, combining the greyish upperparts hues of the former and the more orangey underparts (strongest on the rear flanks), subtly pale throat and strong eye-ring of the latter. If visible, the wing formula would eliminate Common Redstart and a hybrid and confirm it as a Black Redstart.

Warbler *Phylloscopus humei* and Desert Wheatear *Oenanthe deserti* and its arrivals in Britain also match those of these two species. All 'Eastern Black Redstarts' found to date have been in November, the peak time for these other species, and their arrival years coincide too. The years 2003 and 2011 were the best on record for Hume's Warbler and the second and third best ever for Desert Wheatear.

A pattern of late-autumn vagrancy to Britain and northwest Europe is thus now well established and 'Eastern Black Redstarts' look destined to reach us regularly in future. Indeed, they are already likely to be reaching us more regularly than we currently recognise. To date, all accepted records in Britain and almost all in northwest Europe have been of the relatively distinctive '*paradoxus*' first-winter males.

In 'Western Black Redstart' around 12% of first-winter males are of the '*paradoxus*' type (Nicolai *et al.* 1996) and the same proportion is said to apply also to eastern birds (Steijn 2005), although no evidence for this is provided. Whatever the actual proportion in eastern birds, we are presumably overlooking at least some first-winter males and, of course, all females. These are browner than 'Western Black Redstart' with subtle orange hues in the flanks, a slightly paler throat and a prominent eye-ring, in all these respects being more reminiscent of female Common Redstart (Steijn 2005; see also plate 109). The elimination of a hybrid in this plumage is probably impossible, however, and would have to rely on biometrics.

Fortunately, however, the field appearance of adult and '*paradoxus*' first-winter males is increasingly recognised as distinctive, while the quality of images now taken in the field often enables biometrics to be assessed without recourse to trapping. For today's observers, and for BBRC, the spectre of Black × Common Redstart hybrids has been, if not banished, then at least placed in a more realistic perspective. For a suitable-looking bird in late autumn, a hybrid is no longer the default option.

The history of 'Eastern Black Redstart' in

Britain (and particularly that of the 1981 Dungeness bird) has been unusually long and tortuous. However, it provides a good example of how our collective knowledge advances in fits and starts. It also offers a good example of how BBRC's approach can adapt to new information and experience. From a position where biometrics or DNA evidence was deemed necessary to secure acceptance (Kehoe 2006; Parkin & Knox 2010), we have now reached the point where this subspecies can be accepted on the basis of field notes. With the characters of male 'Eastern Black Redstart' now well understood, and observers suitably primed, we can certainly anticipate more records; although how long it will be before the first accepted record of a bird in a female-type plumage is harder to gauge.

Acknowledgments

Roger Riddington helped with the BBRC analysis of the biometrics of the 1981 Dungeness bird, based on the new photos supplied by Brian Cox.

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Observations of Matsudaira's, Wilson's and Black-bellied Storm-petrels in Seychelles

Hadoram Shirihai and Adrian Skerrett

Abstract During a pelagic trip to the northern edge of the Seychelles Bank (around 3°48'S 55°40'E), we spent two days using chum to attract seabirds. Data were gathered on the distribution and abundance of several species, some of which are of particular interest in a Western Palearctic context, notably Matsudaira's *Oceanodroma matsudairae* and Black-bellied Storm-petrels *Fregetta tropica*. The results, including photographs, are presented here, together with comments on the identification of these two species in particular.

Little is known about the pelagic birdlife in and around the waters of the Seychelles archipelago in the western Indian Ocean, in particular to the east of the islands. In November 2014, we spent two days at sea off Denis Island (on the northern edge of the Seychelles Bank, around 3°48'S 55°40'E), where we gathered data on the abundance, movements and behaviour of several seabirds, in particular Matsudaira's *Oceanodroma matsudairae*, Wilson's *Oceanites oceanicus* and Black-bellied Storm-petrels *Fregetta tropica*. This is the first large-scale chumming expedition in Seychelles waters, carried out as part of the research for the forthcoming book *Albatrosses, Petrels and Shearwaters of the World* (Shirihai & Bretagnolle in prep.).

Methods

From Denis Island, we chartered the game-fishing boat *Lady Claire* on 25th and 26th November 2014. At sea, we used the chumming techniques adopted by HS during previous expeditions to the Bismarck archipelago (Papua New Guinea), Gau Island (Fiji), Reunion Island (western Indian Ocean), and Madeira (see Shirihai 2008, 2009 and Shirihai *et al.* 2009, 2014). Prior to our arrival, large blocks of chum were prepared and then frozen. Each block weighed c. 10 kg and comprised c. 70% grained or cut fish offal and 30% fresh water; these were kept frozen in plastic containers until used. Frozen blocks allow the chum to float longer, thus increasing the chances for storm-petrels to take the food before it sinks, yet still creating a pungent and constant oil slick that drifts downwind and can be detected by birds from a considerable distance.

Over the two days we covered five survey areas or 'sites', travelling c. 220 km (120 nautical miles) in total. After we had arrived in a survey area, one or two blocks of chum were dropped overboard at hourly intervals. In total, we used 16 blocks on 25th November and 11 blocks on 26th. Each site was surveyed for 2–4 hours (apart from site 4, where the survey was terminated after 75 minutes owing to the lack of birds). Chumming locations (see table 1 and fig. 1) were selected based on underwater topography, lying close to and along contour lines of the Seychelles Bank, in sea depths of c. 30–900 m. GPS with a marine chart programme was used to establish our positions, the distance between locations and the exact position of sightings.

Matsudaira's Storm-petrel

Identification

This is a large, dark-rumped *Oceanodroma* storm-petrel with a long and deeply forked tail, and typically long and angular wings. It appears very similar to Swinhoe's Storm-petrel *O. monorhis*, from which it can be reliably separated only by its larger size. We observed Matsudaira's Storm-petrels feeding on the chum, often side by side with Wilson's Storm-petrels, when the former appeared considerably larger and bulkier. The tail was felt to be proportionally longer and to show a deeper fork than Swinhoe's but there is variation in tail structure, making this difficult to assess at sea. Swinhoe's was not identified during this survey so a direct comparison between the two species was not possible.

All the Matsudaira's observed showed a whitish patch at the base of the upper surface of the outer primaries, formed by whitish shafts, and often also the feather bases, on up to seven of the outermost primaries. All birds showed a prominent pale diagonal panel across the upperwing (the ulnar bar), from the carpal bend to the trailing edge of the wing, near the base.

During our observations we observed considerable variation in these features. Both Matsudaira's and Swinhoe's show a pale base to the outer primaries, making their separation particularly difficult. Based on extensive observations of the two species by HS in the western Pacific, including Japan, it is considered that there is much overlap in the extent and prominence of the white primary patch and that this is not diagnostic for either. In a minority of Matsudaira's, the white feather bases form a more extensive primary patch than observed on any Swinhoe's, yet in some Matsudaira's the white patch can be limited, even almost lacking. Observations in the western Pacific also revealed tentative minor differences in the shape and extent of the ulnar bar. Compared with Swinhoe's, the pale sandy-buff ulnar bar on the rear upperwing-coverts of Matsudaira's often appears broader and wider yet less sharply defined from the surrounding darker areas. Towards the front of the wing the pale bar often reaches the leading edge, or falls just short, leaving only a small gap. Swinhoe's typically shows a narrower and more solid ulnar

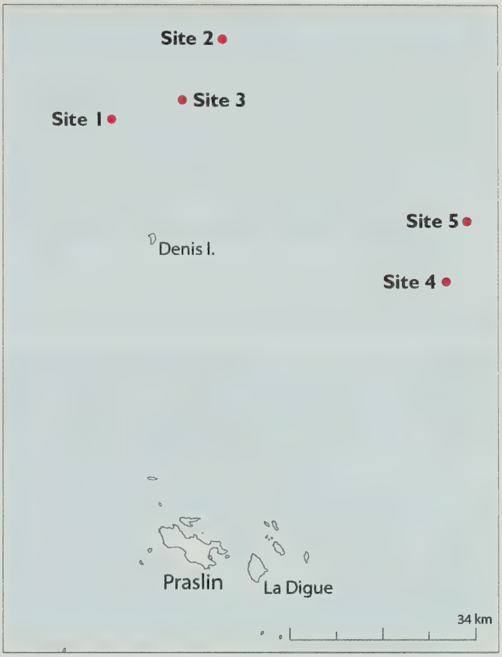

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Fig. 1. Locations over the Seychelles Bank to north and east of Denis Island, Seychelles, where observations were undertaken after frozen chum had been used to attract storm-petrels on 25th and 26th November 2014. (See also fig. 1 on p. 232 for the position of Denis at a wider scale.)

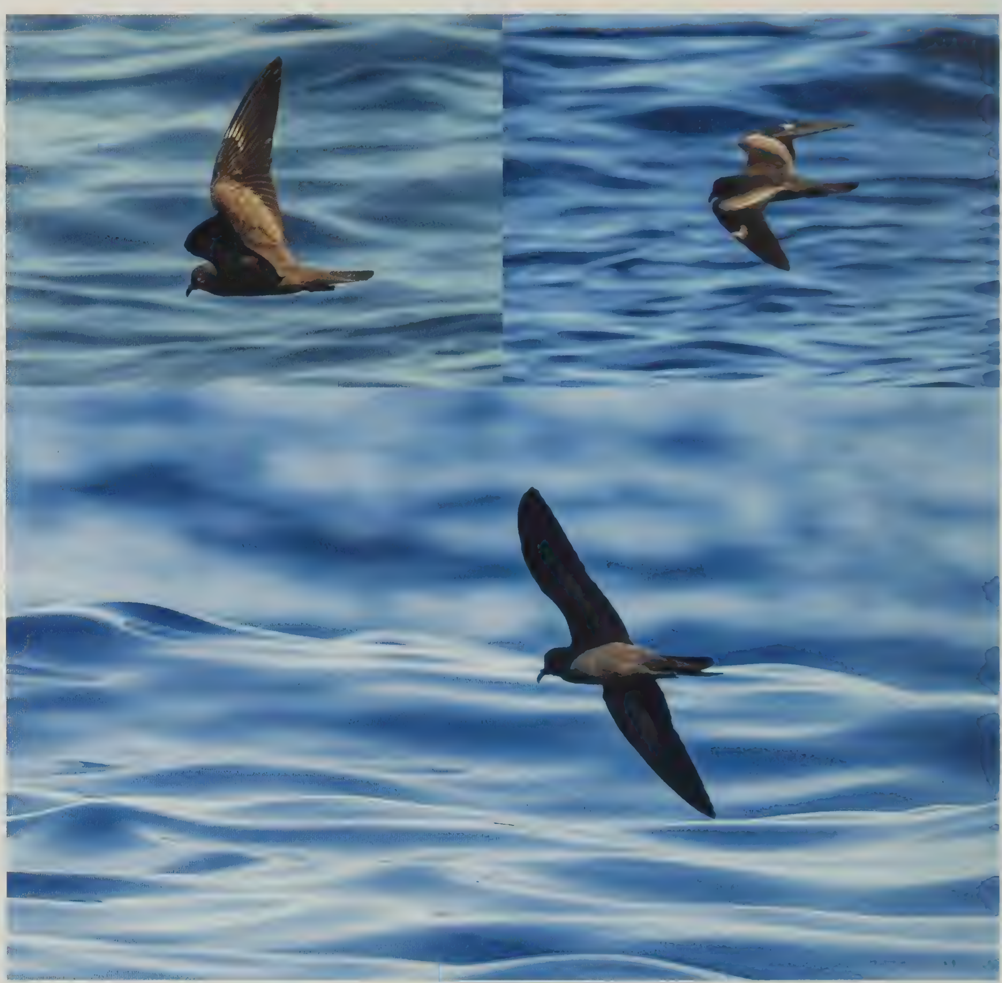
Table 1. Location of survey areas, north and east of Denis Island, Seychelles, November 2014. Totals of storm-petrels recorded are given for each site.

Site	Date	Co-ordinates	Matsudaira's	Wilson's	Black-bellied
en route to site 1	25th Nov		1	1	
1	25th Nov	3°37'S 55°36'E	5	3	
2	25th Nov	3°29'S 55°47'E	4	3	
3	25th Nov	3°35'S 55°43'E	1	3	
4	26th Nov	3°53'S 56°09'E			
5	26th Nov	3°47'S 56°11'E	3	15	1
Total			14	25	1

bar, which does not reach the leading edge.

The observations off Denis Island further reinforced the view that these upperwing features are consistent and characteristic of Matsudaira's (see plates 110–121). However, observers should be cautious when applying them as there is overlap, and the prominence of the ulnar bar varies with viewing angles as well as lighting.

Compared with Swinhoe's, the head and neck of Matsudaira's often shows a sooty or slaty hue, resulting in a darker appearance that can contrast strongly with the browner body. Swinhoe's is very similar but the body tends to be darker, blackish sooty-brown, so less contrast is apparent between the head and body (although this is visible only on birds observed closely). These slight differences in shade and hue should be regarded only as tendencies, which can be appreciated only with close views and in neutral light conditions.



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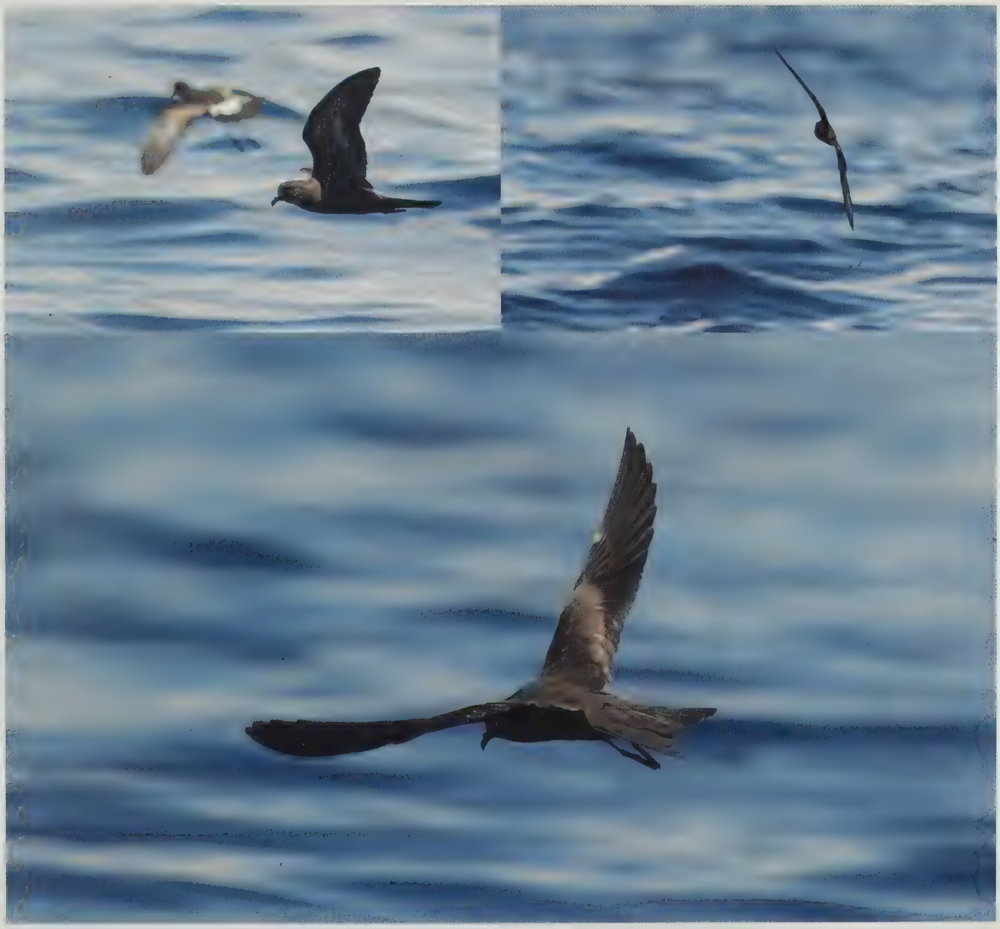
110–112. Matsudaira's Storm-petrel *Oceanodroma matsudairae*, at sea off Denis Island, Seychelles (3°37'S 55°36'E), November 2014. This sequence of one individual illustrates the long wings and relatively long, deeply forked tail of this large, dark-rumped *Oceanodroma*. Note how the apparent shape, size and contrast of the white patch at the primary bases and of the pale upperwing bar appear to change with angle and light. The white patch is created by the white primary shafts but can also extend onto the webs to form a more extensive patch, more evident when the wings are angled backwards (111). The pale bar on the rear upperwing-coverts appears quite broad and wide, yet not especially sharply defined from the surrounding darker wing areas – particularly when the wing is outstretched (110). The leading edge of this wing-bar can, at times, appear well defined and often extends to, or almost to, the leading edge of the wing. At sea this bird was considered to be a small individual, presumably male.

Matsudaira's is also difficult to distinguish from Tristram's Storm-petrel *O. tristrami*, although the latter lacks the white patch at the base of the primaries. Separating Matsudaira's from both Black *O. melania* and Markham's Storm-petrels *O. markhami* of the eastern Pacific is highly challenging and beyond the scope of this paper.

In flight, Matsudaira's appears lethargic and travels with relaxed wingbeats interrupted by moderate to long glides, sometimes giving the impression of an 'accelerating' noddy *Anous*, especially when seen flying away at an angle. Thus, it lacks the quicker flight of a 'typical' Swinhoe's in similar conditions. Notwithstanding this relatively relaxed flight action, Matsudaira's often travels deceptively fast, and flies consistently low, close to the sea surface, which makes birds difficult to follow; they can disappear rapidly between low waves or against a background of dark water.

Factors affecting identification

When separating Matsudaira's and Swinhoe's, particular emphasis has been placed on the importance of establishing the size and extent of the whitish patch at the base of the upper surface of the outer primaries. This patch has invariably been described as being larger and/or more prominent or more solidly patterned in



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113–115. Matsudaira's Storm-petrel *Oceanodroma matsudairae*, at sea off Denis Island, Seychelles (3°37'S 55°36'E), November 2014. Again, note the proportionally long and deeply forked tail, and pronounced ulnar bar (115), most conspicuous on the greater coverts, becoming ill-defined towards the leading edge of the wing; from this angle the bar appears to reach the marginal coverts near the carpal bend. Plate 113 reveals the size-illusion effect with a distant and smaller Wilson's Storm-petrel *Oceanites oceanicus*, which appears misleadingly larger than the Matsudaira's. In 114 this bird is believed to be a small (presumed male) Matsudaira's.

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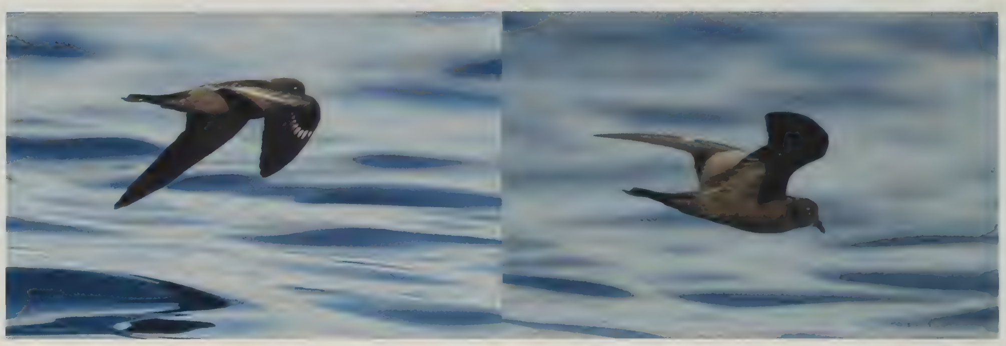

116 & 117. Matsudaira's Storm-petrel *Oceanodroma matsudairae*, at sea off Denis Island, Seychelles (3°37'S 55°36'E), November 2014. Note how the white patch at the base of the primaries appears to vary in shape with the bend of the wing and angle of view. The ulnar bar (116) may appear better defined and a more obvious gap may be apparent between it and the leading edge from this angle. This bird was also particularly small in the field, presumably male, but was distinctly larger than Wilson's Storm-petrel *Oceanites oceanicus* when seen side by side.

Matsudaira's than in Swinhoe's (e.g. Harrison 1987, Marchant & Higgins 1990, Enticott & Tipling 1997, Sinclair & Langrand 1998, Brooke 2004, Onley & Scofield 2007, Howell & Patteson 2008, Flood & Fisher 2011, Skerrett & Disley 2011, Safford & Hawkins 2013). Variation in contrast in the pale upperwing ulnar bar was discussed by Howell & Patteson (2008), and its exact extent on the upperwing-coverts was described by Flood & Fisher (2011). Yet other than the last two references, the variation and extent of overlap in the appearance of the upperwing of the two species has been poorly described. We emphasise that both the primary patch and the ulnar bar of Matsudaira's are variable and in terms of separation from Swinhoe's they should be treated as subsidiary features only and used with extreme care.

If estimated correctly, the larger size of Matsudaira's is the most important feature for separation from Swinhoe's, at least in the western Indian Ocean. However, observers faced with one of these dark-rumped storm-petrels should bear in mind two caveats. Firstly, with lone individuals, it takes time to assess the true size of a petrel (and this impression can often change during the observations owing to the mode of flight, angle to the observer, lighting conditions, etc.). Even with previous experience of both species, we found it difficult to gauge the size accurately, but the presence of Wilson's Storm-petrels alongside on several occasions helped us to estimate their true size. Secondly, we found considerable individual size variation in the Matsudaira's observed, with some (probably males) appearing distinctly smaller and others (probably females) notably larger and heavier. As a rough guide, Matsudaira's appears c. 30% larger than Wilson's (in terms of wingspan and total

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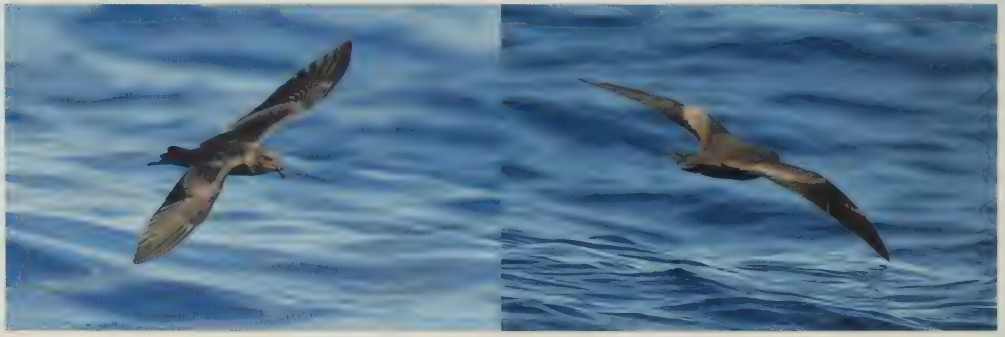
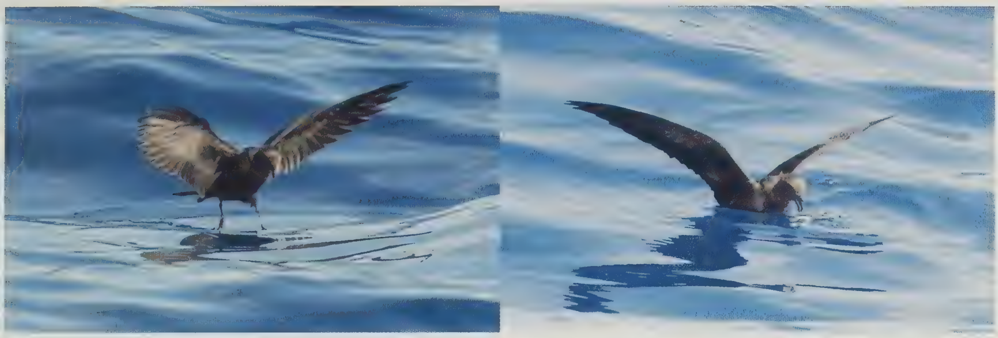


118 & 119. Matsudaira's Storm-petrel *Oceanodroma matsudairae*, at sea off Denis Island, Seychelles (3°37'S 55°36'E), November 2014. The white primary patch is particularly poorly developed and was hardly visible at sea on this individual. This bird also has a heavily worn tail, giving it a shorter-tailed structure, and it is replacing some rectrices.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120 & 121. Matsudaira's Storm-petrel *Oceanodroma matsudairae*, at sea off Denis Island, Seychelles (3°37'S 55°36'E), November 2014. A feeding sequence showing another small bird (presumed male).

length), whereas Swinhoe's is only c. 15% larger. Yet in terms of the overall impression, Matsudaira's appears almost twice as large and heavy as Wilson's, as a consequence of its body mass being around 40% greater. Consequently, we believe that, eventually, most Matsudaira's should be identified by their larger size if seen with other storm-petrels.

We found no clear correlation between overall size and the prominence of the upperwing markings, although rather small Matsudaira's with poorly developed wing markings (e.g. plates 113–115 & 118–121) can strongly resemble Swinhoe's Storm-petrels. This potential pitfall has not been adequately described or discussed in the literature.

Behaviour

All 14 Matsudaira's Storm-petrels encountered off Denis Island behaved very differently from the birds HS has observed previously around the Bonin Islands in southern Japan, and the Bismarck archipelago off northern Papua New Guinea, all of which lingered around chum. In contrast, the Seychelles birds remained on the chum for a very short time and would not tolerate a close approach by the boat; most encounters were brief, and at a range of 30–200 m. In the Pacific, Matsudaira's is inclined to follow ships and is a particularly aggressive scavenger; typically, tens of birds remain on the chum to feed in tight groups until the food is finished, with some individuals remaining for several hours. The behaviour of Matsudaira's off Seychelles was more similar to that of the typically more elusive Swinhoe's in the Pacific (HS pers. obs.), where it is wary of a close approach. We cannot explain these differences in behaviour, but it does suggest that the degree to which birds will approach boats or chum is an unreliable ID character (e.g. Enticott & Tipling 1997).

Status of Matsudaira's Storm-petrel in the western Indian Ocean

There has been just one previous record of Matsudaira's Storm-petrel in the Seychelles recording area: two birds observed between Providence and Alphonse in August 2000 (Skerrett *et al.* 2006, 2007). This is the only fully documented record from anywhere in the western Indian Ocean, although there are various other published reports that lack descriptions, making them impossible to verify (e.g. Gill 1967, Bailey 1968, Seitre 1997, Louette 2004, Clément *et al.* 2008). There are three Seychelles records of Swinhoe's Storm-petrel: one found alive but later died at Praslin in October 1996 (specimen now at the Natural History Museum, Tring), one at sea between Aldabra and Assumption in October 1996 and another in the same location in December 1998 (Skerrett *et al.* 2006, 2007).

Known world range and migration

Matsudaira's Storm-petrel is known to breed only on the Volcano Islands in southern Japan. Outside the breeding season it apparently migrates to the Timor Sea off northwest Australia, and then west into the Indian Ocean. There has been a widely held assumption that it winters mostly in the equatorial belt around Seychelles and west to East Africa but proof has been lacking. The global population is thought to be at least 20,000 individuals (Brooke 2004).

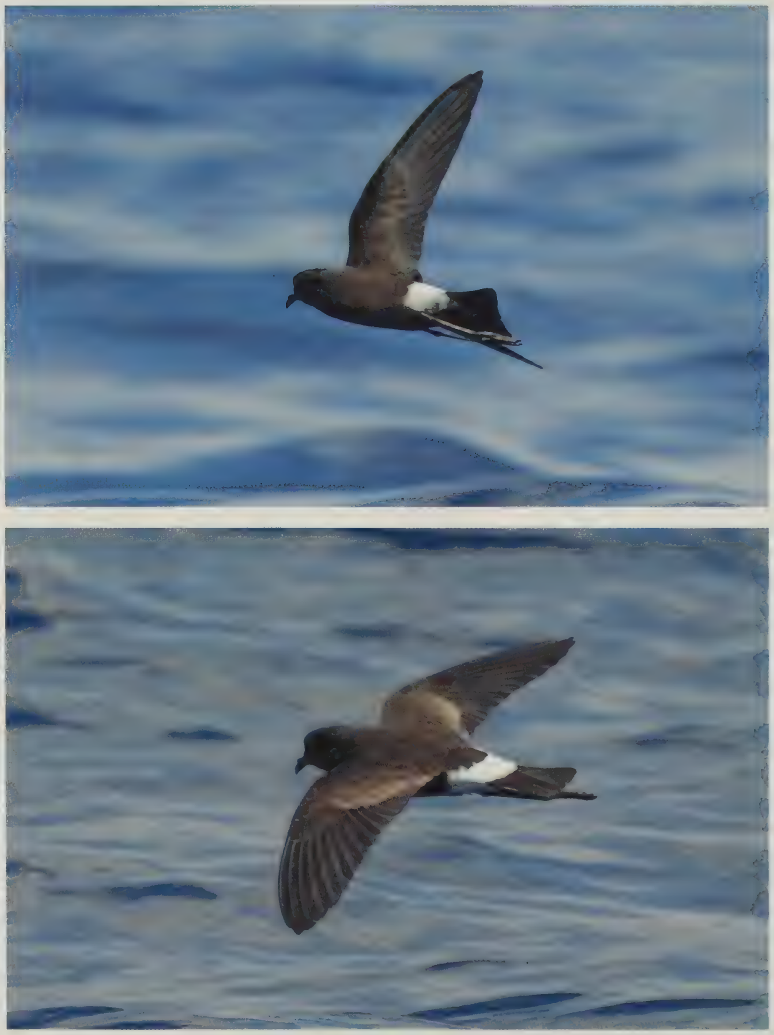
The presence of Matsudaira's Storm-petrels at four of the five chumming sites we visited provides a tantalising clue into a possible wintering area. With only one previous record from the entire western Indian Ocean, it may be that the seas above the Seychelles Bank represent an undiscovered wintering ground. However, more information is needed (see below).

Wilson's Storm-petrel

Identification

Wilson's Storm-petrel is the 'default' storm-petrel of the southern oceans, by far the most likely species to be encountered, and its identification is relatively straightforward. It is a small and compact white-rumped storm-petrel with rather rounded wings and square-ended tail, and mostly blackish to sooty-brown plumage. Its most noticeable features include the bold white rump patch extending to the sides of the vent, and the pale greater coverts that form an ulnar bar, evident in flight. The underwing is predominately sooty-brown with a variable greyish-white wash to the underwing-coverts (not always visible). The remainder of the underparts are entirely dark. When the legs are extended, the yellow webbing between the toes may be visible, though it often takes some time to see this feature at sea.

It flies on typically rather short, rounded wings, with a hirundine-like jizz and action; the flight is not particularly erratic or buoyant, with moderate bounding. It usually flies rather slowly and close to the sea surface, especially when foraging. It can, however, be more direct and faster in active flight and windy conditions, with rapid wingbeats interspersed by short glides (Shirihai 2007). Flood & Fisher (2011) and Howell (2012) provided greater identification insight and discussion of separation from similar species.



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122 & 123. Wilson's Storm-petrel *Oceanites oceanicus*, at sea off Denis Island, Seychelles, November 2014. Note the bold white rump patch extending to the vent sides, the pale upperwing-coverts forming an ulnar bar, and the somewhat pale wash along the underwing-coverts (not always visible); long feet projecting beyond the square-ended tail are diagnostic.

Behaviour

When feeding on chum, singles or small groups flutter close to the sea surface with legs dangling and feet dipping into the sea. They take small, loose pieces of chum from or just below the surface by dipping or pattering; the latter involves bouncing and walking on the water surface, with the assistance of partially open wings against the wind. The legs are retracted for more purposeful flight.

Status of Wilson's Storm-petrel in the western Indian Ocean

There have been six accepted records involving 11 individuals within the Seychelles recording area, in October, November, April and July (Skerrett *et al.* 2011). Elsewhere in the western Indian Ocean it is recorded mainly in April–May and October–November, suggesting passage migration (Safford & Hawkins 2013). Systematic observations indicate that it is uncommon and greatly outnumbered by Black-bellied Storm-petrel (Le Corre 2002) but it was considered common by, for example, Barré (1983), Payet *et al.* (1995) and Barré *et al.* (1996).

Known world range and migration

Wilson's breeds in ice-free regions of the Antarctic and the sub-Antarctic islands. Outside the breeding season, it disperses widely, crossing the equator in all oceans to spend the northern summer in the North Pacific and North Atlantic Oceans.

Our observations, in late November, are not inconsistent with records of this species elsewhere. Wilson's Storm-petrels generally migrate north in April–June, and return from September to November, although some remain as late as December or even January in the North Atlantic off North America. They may move in a clockwise direction around the Pacific and Atlantic Oceans, although both northbound and southbound passage is apparently evident off the east coast of North America. It is possible that a clockwise migration also occurs in the Indian Ocean, which would suggest that birds should be less numerous on southbound migration in the western Indian Ocean (and hence at the time of our study).

Black-bellied Storm-petrel

The one individual recorded, at site 5, appeared at 13.30 hrs and remained until our departure c. 20 minutes later (plate 124).

Identification

This is a medium to large, well-built but rather compact storm-petrel (the size at sea never appears as large as measurements suggest), with rounded wings and square-ended, relatively short tail. It is mainly black above except for a dark brown mantle and upperwing-coverts, paler ulnar bar and sharply contrasting broad white lower rump and uppertail-coverts. The underwing-coverts form a large white panel in the central underwing, outlined by broad black leading and trailing edges. The underparts, flanks and undertail-coverts are white, and merge with the white underwing- and uppertail-coverts. The extent of dark feathering on the vent and centre of the belly varies between individuals; on the bird we observed, the black line running down the centre of the belly could be detected and confirmed only by photographic evidence (see below). The bill is black with prominent tubular nostrils, legs and feet are black.

The flight is rather erratic, often involving some zig-zagging, as it repeatedly drags its feet or 'bounds' off water, rocking from side to side on shallow wingbeats while remaining close to the sea surface.

If the black central belly stripe is present and observed, then separation from White-bellied Storm-petrel *F. grallaria* is straightforward. Other differences between the two are slight and difficult to assess. Black-bellied usually appears longer-legged and its feet clearly project beyond the tail tip, but this varies individually and is, in general, extremely difficult to observe at sea. In some Black-bellied, foot projection may be lacking, and these birds are inseparable from White-bellied on this character. In areas (and seasons) when both species can occur, difficult birds or those seen poorly are best left unidentified.

Within the Seychelles recording area and Malagasy region, only a handful of Black-bellied have been confirmed and its precise status is yet to be determined. There are two published sight records of White-bellied from the western Indian Ocean but both lack supporting details (Safford & Hawkins 2013) and its precise status remains to be determined. Yet it has been described as an uncommon winter visitor and mapped as present throughout the entire Malagasy region (Sinclair & Langrand 1998). Shirihai (2007), Flood & Fisher (2011) and Howell (2012) provided more detail on variations and pitfalls.

Behaviour

This bird fed in loose association with Wilson's Storm-petrels, flying low over the sea, rocking from side to side and dipping towards the surface, feet skipping off the water. It did not patter on the surface in a manner similar to that shown by Wilson's but dipped its head towards the surface while holding its wings high over its back.

Status of Black-bellied Storm-petrel in the western Indian Ocean

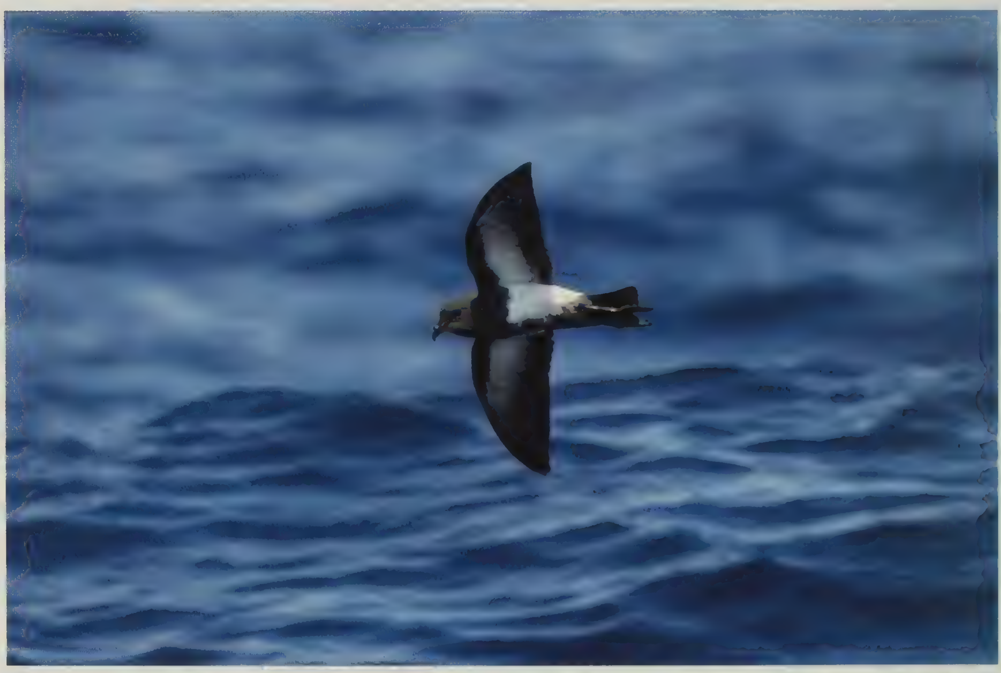
There are two previous records in the Seychelles recording area, in June 2010 and July 2014. The species has been reported elsewhere in the western Indian Ocean, mainly in the south, but generally without details. This additional record adds little to establishing its true status in the seas around Seychelles.

Known world range and migration

Black-bellied Storm-petrel breeds on Antarctic and sub-Antarctic islands in the southern Indian Ocean, Scotia Sea and south of New Zealand (Brooke 2004). In the austral winter some remain south, dispersing throughout the southern oceans, but many move north into the Indian Ocean, where it is abundant off the Arabian Peninsula in August and September (Marchant & Higgins 1990).

Other seabirds encountered

Within sight of Denis we encountered White-tailed Tropicbird *Phaethon lepturus*, Bridled *Onychoprion anaethetus* and White Terns *Gygis alba*, Brown *Anous stolidus* and Lesser Noddies *A. tenuirostris*, all of which breed on Denis or other nearby islands on the Seychelles Bank. In the vicinity of the chumming sites small numbers of Lesser Noddies and a few White Terns were seen. Wedge-tailed Shearwaters *Puffinus pacificus* were also encountered, in singles, pairs or flocks of up to 20 birds, especially at sites farthest from land. Wedge-tailed Shearwaters breed on Denis in small numbers and on other nearby islands in much larger numbers. A single



Tubenoses Project & Extreme Gadfly Petrel Expeditions © H. Shirihai

124. Black-bellied Storm-petrel *Fregetta tropica*, at sea off Denis Island, Seychelles, November 2014. The diagnostic black central line on the belly appears obvious in this photograph, but during much of the observation period it was undetectable. Note also the feet projecting behind the tail tip.

Flesh-footed Shearwater *Puffinus carneipes* was seen at site 2 associating with c. 15 Wedge-tailed Shearwaters. The Flesh-footed Shearwater breeds mostly in Australasia although an isolated population of 400–600 pairs breeds on St Paul in the southern Indian Ocean (Marchant & Higgins 1990). Occasional sightings of up to three Red-footed Boobies *Sula sula*, mainly subadults, were made especially on 26th November at sites far from land. This species also breeds in the southern islands and atolls of Seychelles.

Scope for further studies

Matsudaira's Storm-petrel has previously been considered to be a scarce migrant to the Malagasy region (e.g. Safford & Hawkins 2013). The number of birds we observed in two days is similar to the total of all historical reports from the Malagasy region combined, although only one of these has any verifiable documentation. Despite the lack of verifiable records, the species has been assumed to winter from Seychelles west to Kenya, departing from September until November (del Hoyo *et al.* 2014). Our observations confirm the presence of birds off the Seychelles Bank until late November. Reports of Matsudaira's Storm-petrels from the British Indian Ocean Territory (BIOT) confirm occurrences c. 1,850 km to the east in the central Indian Ocean at the same time of year (Carr 2014). It is possible that these observations indicate a later departure date or alternatively perhaps the presence of non-breeders in the Indian Ocean all year round.

The discovery of 14 Matsudaira's Storm-petrels at the Seychelles Bank suggests that this may be a significant wintering site, while the sightings of 25 Wilson's and a single Black-bellied Storm-petrel are significant given the paucity of authenticated sightings of these species in the western Indian Ocean. Both may occur more frequently than the number of previous records suggests, particularly Wilson's, which has been reported more frequently in the western Indian Ocean than any other storm-petrel, but most sightings generally lack supporting documentation or specimens (Safford & Hawkins 2013). Additional surveys are required to confirm the seasonal presence of birds; they may be present throughout the austral winter or perhaps some non-breeders may remain here year-round.

This expedition provided a brief glimpse into what may be occurring in the western Indian Ocean. It produced intriguing results and considerably increased the number of storm-petrels recorded in the western Indian Ocean. Further chumming trips are needed at different times of year to assess seasonality and at different locations to assess distribution, of all species. A future assessment of pelagic seabird distribution should take into consideration other locations around the Seychelles Bank.

Acknowledgments

Thanks are due to game-fishing boat skipper Rolly Pierre for his patience and adaptability to the requirements of ornithologists chumming for petrels, and also to Mickey Mason for overseeing the preparation in advance of frozen chum to the required standards.

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Corrections

In the February issue, p. 130, the correct RRP for *The Peregrines of Norwich Cathedral* is £12.50, not £19.99 as given.

In the March issue, the paper on moult and ageing of Isabelline Shrikes *Lanius isabellinus* refers to a statement in Svensson (1992) at the bottom of p. 159. Owing to a change in nomenclature (see *Brit. Birds* 95: 593–596), the '*isabellinus*' referred to in Svensson (1992) relates to the taxon currently known as *L. i. arenarius*, not nominate *L. i. isabellinus.*

Migrant Palearctic landbirds in Seychelles

John Phillips, Adrian Skerrett and John Bowler

Abstract This paper summarises the records of Palearctic landbird migrants in Seychelles up to the end of 2014. Despite their relatively tiny land area and remote location in the western Indian Ocean, the islands receive a wide range of migrant species from a vast source area. Some species occur every year, and their breeding and wintering distribution suggests that they regularly undertake sea crossings of thousands of kilometres through this sector of the Indian Ocean, at least in autumn. Some of the less frequent species are more likely to be wind-drifted. Visitors to Seychelles are invited to submit their bird records, to help to improve our understanding of migration in the region.

Geographical and climatic context

The 150+ Seychelles islands are scattered across a third of a million km^2 of the western Indian Ocean, between 4° and 10°S and 46° and 56°E (see fig. 1). There are four main clusters of islands: the northern group, the Amirantes, Farquhar and Aldabra. The total land area amounts to only 455 km^2, one-third of which is the high island of Mahé in the northern group, and another third is the atoll of Aldabra. Aldabra is only around 600 km from the nearest point of mainland Africa, and the southernmost islands of the Aldabra and Farquhar groups are less than 300 km from Madagascar, but the Amirantes and especially the northern group are more remote. Mahé lies 1,250 km southeast of the nearest continental land on the coast of Somalia, 2,500 km south of Oman, and 2,800 km southwest of the nearest part of the Indian subcontinent.

The climate of the western Indian Ocean is dominated by seasonal changes in wind direction. North of the equator, northeast

Colin Bell

125. The smaller nature reserve islands of Aride (shown here, in January 2008), Cousin and Cousine, in the northern group off Praslin, have hosted a fairly wide range of migrants over the years. Aride has benefited from regular staffing by birders and has produced a high proportion of records.

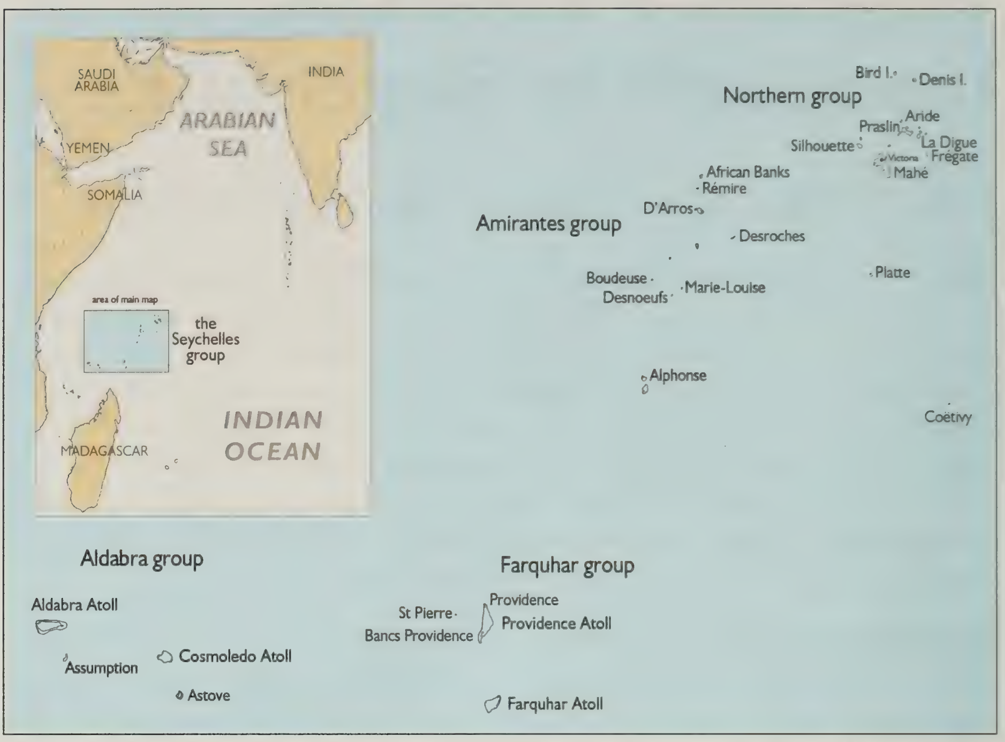

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Fig. 1. Map of Seychelles showing the various island groups mentioned in the text. The inset shows the islands in their wider geographical context.

winds blow from October to April and southwest winds from May to September. South of the equator (including all the Seychelles islands) these winds are northwest and southeast respectively. The timing of the change in wind direction varies from year to year, and the transition periods, when the winds are variable in strength and direction, may last for weeks.

A brief history of migrant recording

Because of the islands' remoteness and distance from known migration routes, it was long assumed that migrant landbirds would not normally reach Seychelles, especially the northern group. A handful of landbirds were collected by nineteenth-century ornithologists, but Moreau (1938) listed only three records from the northern Seychelles: an Oriental Pratincole *Glareola maldivarum*, a Common Cuckoo *Cuculus canorus* and a Hobby *Falco subbuteo*. Moreau concluded that, given favourable winds, about six long-winged landbird species would probably regularly fly the 2,500 km across the northwestern Indian Ocean, but that 'only stragglers of a few Palearctic land species' would ever reach Seychelles. A few more records were added during subsequent decades, but it was not until the Royal Society expedition to Aldabra in 1967/68, prompted by the proposal to site an airbase there, that the trickle began to swell. The arrival of resident scientists in Seychelles from the early 1970s provided a further boost, as did the opening of the international airport in 1972, which stimulated the growth of tourism. The first Seychelles bird guide (Penny 1974) included 19 species of Palearctic landbirds as defined here, and Feare & Watson (1984) listed 43 species, remarking on the 'explosion' of records during the previous decade. There has been a further acceleration in recent years, particularly following the establishment in 1992 of the Seychelles Bird Records Committee (SBRC), which has encouraged observers to send in sightings and has reviewed historical records. By the end of 1999, 64 species of Palearctic landbirds had been recorded (Skerrett *et al.* 2001), and since then the total has risen to 78.

Species recorded

Numbers of accepted records of Palearctic-breeding landbirds from the main Seychelles island groups are given in table 1. The few records from the isolated Farquhar group (single Pacific Swift *Apus pacificus*, House Martin *Delichon urbicum*, Rock Thrush *Monticola saxatilis* and White Wagtail *Motacilla alba*) have been included in the totals for nearby Aldabra for convenience. Each record represents one sighting, regardless of how many birds were involved. Some of the wide range of migrant species have appeared regularly: Common Cuckoo, European Roller *Coracias garrulus*, Amur Falcon *F. amurensis*, Barn Swallow *Hirundo rustica* and Tree Pipit *Anthus trivialis* have been recorded annually in recent years, and Lesser Cuckoo *Cuculus poliocephalus*, Common Swift *Apus apus*, Hobby, Eleonora's Falcon *F. eleonorae*, Golden Oriole *Oriolus oriolus*, Sand Martin *Riparia riparia*, Spotted Flycatcher *Muscicapa striata*, Common Redstart *Phoenicurus phoenicurus*, Northern Wheatear *Oenanthe oenanthe*, Yellow *M. flava* and White Wagtails and Red-throated Pipit *Anthus cervinus* are probably also annual visitors.

Usually only small numbers of birds are seen, but there are reports of up to 50 Amur Falcons and 50 Barn Swallows, and several flocks of Blue-cheeked Bee-eaters *Merops persicus* including one of 2,000. Groups of up to six Tree and Red-throated Pipits are sometimes seen, and there have been occasional multiple sightings of 26 other species.

Origins and destinations

The breeding ranges of the most frequently recorded migrants in Seychelles (Common Cuckoo, Blue-cheeked Bee-eater, European Roller, Hobby, Golden Oriole, Barn Swallow, Spotted Flycatcher, Northern Wheatear, Tree and Red-throated Pipits) extend far to the east across the Palearctic, to the Pacific coast in some cases (Feare & Watson 1984). Less frequently recorded species are more confined to the western and central Palearctic in the breeding season. In addition, all migrants on the Seychelles list that breed widely across the Palearctic and whose winter ranges extend well to the south in Africa are reported regularly (e.g. Common Cuckoo, Hobby, Barn Swallow, Northern Wheatear, Tree Pipit), while most with similar breeding distributions but wintering in more northern or central parts of Africa have been recorded infrequently (e.g. Rock Thrush, Isabelline *O. isabellina* and Pied Wheatears *O. pleschanka*, Grey Wagtail *Motacilla cinerea*). Of species with a west or west-central Palearctic breeding range, even those that migrate to central or southern Africa (e.g. Whinchat *Saxicola rubetra*, most of the warblers), are rarer in Seychelles than the pan-Palearctic breeders wintering in the same zone.

Of species breeding only in the Eastern Palearctic, Amur Falcon and Lesser Cuckoo, which winter in southern Africa, regularly visit Seychelles, while Oriental Pratincole, Pacific Swift and White-throated Needletail

Adrian Skerrett

126. Bird Island (seen here in November 2005) is the most northerly island in the group; small enough to cover in a day and with open habitats making birds easier to find, it has produced more records of migrants than anywhere else in Seychelles.

Table 1. Numbers of migrant landbirds recorded per island group based on records accepted by SBRC to the end of 2014. 'Landbirds' includes Stone-curlew *Burhinus oedicnemus*, pratincoles and crakes, on the basis of the habitats they use in Seychelles.

Species		Number of records per island group			
		Northern	Amirantes	Aldabra & Farquhar	Total
Common Quail	*Coturnix coturnix*	3	0	0	3
Honey-buzzard	*Pernis apivorus*	6	1	0	7
Black Kite	*Milvis migrans*	1	2	1	4
Marsh Harrier	*Circus aeruginosus*	3	0	0	3
Pallid Harrier	*Circus macrourus*	0	1	0	1
Booted Eagle	*Aquila pennata*	1	0	0	1
Osprey	*Pandion haliaetus*	2	0	0	2
Spotted Crake	*Porzana porzana*	1	1	0	2
Little Crake	*Zapornia parva*	1	0	0	1
Corncrake	*Crex crex*	4	0	0	4
Stone-curlew	*Burhinus oedicnemus*	2	1	0	3
Collared Pratincole	*Glareola pratincola*	11	3	1	15
Oriental Pratincole	*Glareola maldivarum*	13	5	0	18
Black-winged Pratincole	*Glareola nordmanni*	7	5	2	14
Turtle Dove	*Streptopelia turtur*	5	2	2	9
Jacobin Cuckoo	*Clamator jacobinus*	11	1	0	12
Great Spotted Cuckoo	*Clamator glandarius*	1	0	1	2
Common Cuckoo	*Cuculus canorus*	42	5	1	48
Lesser Cuckoo	*Cuculus poliocephalus*	16	2	2	20
Eurasian Scops Owl	*Otus scops*	7	0	0	7
European Nightjar	*Caprimulgus europaeus*	5	0	0	5
White-throated Needletail	*Hirundapus caudacutus*	4	1	1	6
Alpine Swift	*Apus melba*	2	0	0	2
Common Swift	*Apus apus*	12	10	10	32
Pacific Swift	*Apus pacificus*	12	1	1	14
Little Swift	*Apus affinis*	5	0	1	6
Hoopoe	*Upupa epops*	0	0	2	2
Blue-cheeked Bee-eater	*Merops persicus*	52	17	3	72
European Bee-eater	*Merops apiaster*	0	0	3	3
European Roller	*Coracias glandarius*	32	8	8	48
Lesser Kestrel	*Falco naumanni*	5	3	0	8
Common Kestrel	*Falco tinnunculus*	0	1	0	1
Red-footed Falcon	*Falco vespertinus*	4	1	0	5
Amur Falcon	*Falco amurensis*	44	24	0	68
Hobby	*Falco subbuteo*	23	7	1	31
Eleonora's Falcon	*Falco eleonorae*	14	7	19	40
Sooty Falcon	*Falco concolor*	4	0	2	6
Saker Falcon	*Falco cherrug*	1	0	0	1
Peregrine Falcon	*Falco peregrinus*	1	0	0	1
Golden Oriole	*Oriolus oriolus*	12	3	12	27
Red-backed Shrike	*Lanius collurio*	2	0	6	8
Lesser Grey Shrike	*Lanius minor*	1	0	2	3
Woodchat Shrike	*Lanius senator*	1	0	0	1
Short-toed Lark	*Calandrella brachydactyla*	6	0	1	7
Bimaculated Lark	*Melanocorypha bimaculata*	1	0	0	1
Plain Martin	*Riparia paludicola*	1	0	0	1
Sand Martin	*Riparia riparia*	18	9	6	33
Barn Swallow	*Hirundo rustica*	69	29	55	153
House Martin	*Delichon urbicum*	5	3	7	15
Wood Warbler	*Phylloscopus sibilatrix*	3	0	3	6

Table 1. contd.		Number of records per island group			
		Northern	Amirantes	Aldabra & Farquhar	Total
Common Chiffchaff	*Phylloscopus collybita*	0	1	0	1
Willow Warbler	*Phylloscopus trochilus*	3	1	2	6
Blackcap	*Sylvia atricapilla*	4	0	2	6
Garden Warbler	*Sylvia borin*	0	1	1	2
Common Whitethroat	*Sylvia communis*	1	0	1	2
Icterine Warbler	*Hippolais icterina*	4	1	0	5
Sedge Warbler	*Acrocephalus schoenobaenus*	1	0	0	1
Marsh Warbler	*Acrocephalus palustris*	0	0	1	1
Rose-coloured Starling	*Pastor roseus*	4	0	0	4
Spotted Flycatcher	*Muscicapa striata*	10	2	27	39
Pied/Semi-collared/ Collared Flycatcher	*Ficedula* sp.	2	0	0	2
Common Redstart	*Phoenicurus phoenicurus*	15	2	0	17
Rock Thrush	*Monticola saxatilis*	3	0	1	4
Whinchat	*Saxicola rubetra*	3	1	0	4
Siberian Stonechat	*Saxicola maurus variegata/ armenica*	1	0	0	1
Northern Wheatear	*Oenanthe oenanthe*	15	12	36	63
Isabelline Wheatear	*Oenanthe isabellina*	6	1	1	8
Desert Wheatear	*Oenanthe deserti*	3	0	0	3
Pied Wheatear	*Oenanthe pleschanka*	4	0	1	5
Yellow Wagtail	*Motacilla flava*	24	6	13	43
Citrine Wagtail	*Motacilla citreola*	1	0	0	1
Grey Wagtail	*Motacilla cinerea*	7	2	0	9
White Wagtail	*Motacilla alba*	24	7	5	36
Richard's Pipit	*Anthus richardi*	0	0	1	1
Tree Pipit	*Anthus trivialis*	99	15	34	148
Red-throated Pipit	*Anthus cervinus*	18	8	2	28
Common Rosefinch	*Erythrina erythrina*	1	0	0	1
Ortolan Bunting	*Emberiza hortulana*	4	1	1	6
Total records		733	214	282	1,229
Total species		70	42	42	78

Hirundapus caudacutus, wintering mainly in Southeast Asia and Australasia, are rarer. Rose-coloured Starling *Pastor roseus*, Citrine Wagtail *M. citreola*, Richard's Pipit *A. richardi* and Common Rosefinch *Erythrina erythrina* breed farther west but winter mostly between the Indian subcontinent and Southeast Asia, with birds from the west of the breeding range migrating southeast in autumn; Richard's Pipit winters regularly west to Pakistan, with frequent records even farther west. There is one record of Rose-coloured Starling in East Africa (Lindsell & Fisher 2009), but none of the other six species in this group have so far been recorded there.

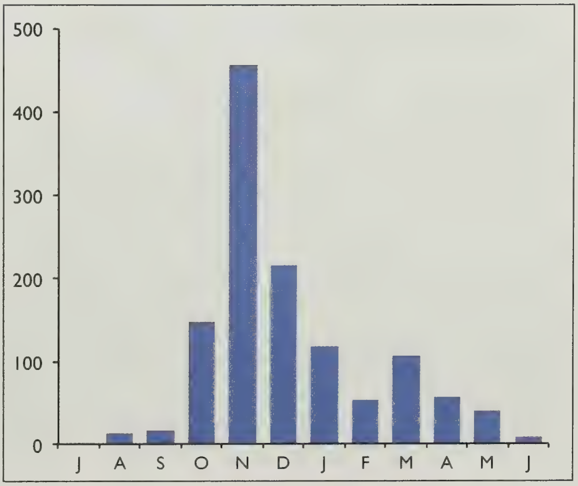

Fig. 2. Total number of migrant landbird records (of 78 species) against month of discovery in Seychelles.

Timing of migration

The pattern of occurrence of migrants through the year, based on the month when the birds were first found, is shown in fig. 2.

The passage periods are difficult to define in Seychelles, with a trickle of records through the northern winter months, but there are clearly far more records in the (northern) autumn (August–January, 79%) than in spring (February–June, 21%). Most individual species conform to this pattern, with between 56% (Barn Swallow) and 100% (Hobby) of records in August–January. There are, however, a few noticeable exceptions. Northern Wheatear shows a January peak (38% of records), and there have been more in February–March than in October–December. There have also been more Spotted Flycatcher and House Martin records in spring than in autumn. Yellow Wagtail, recorded every month from October to May, shows slight peaks in November and March.

None of the more frequent species have median autumn discovery dates earlier than 10th November. The median date for Amur Falcon is 1st December and for Common Cuckoo as late as 6th December. On the other hand, Common Swift records are evenly spread through September to January, and Sand Martin shows an earlier (October–November) peak. In spring the small peak in March is shared by most species. A noticeable exception is Barn Swallow, which shows a March–April peak with several records in May and indeed has been recorded in every month except July.

Distribution of records in Seychelles

As well as accommodating 99% of the country's human population, the northern Seychelles have historically been more accessible to visitors compared to the other groups. Aldabra has benefited from permanent research staff for several decades, and more recently the establishment of hotels and conservation centres in the Amirantes has resulted in a welcome increase in records from these formerly rarely visited islands. However, the distribution of records across the island groups is sure to reflect past and present differences in levels of coverage and reporting.

There are accordingly considerably more records, of nearly twice as many species, in the northern group than in the Amirantes and Aldabra (table 1). Yet numbers of some species in the southern islands have been similar to or even greater than those in the northern group: for example Common Swift, Golden Oriole, House Martin, Spotted Flycatcher and Northern Wheatear. Some of these apparently anomalous species in terms of distribution across the island groups also show atypical seasonal patterns (see above).

A few species that occur regularly in the northern islands have yet to be recorded in Aldabra – most notably Amur Falcon but also, among species recorded 15 or more times, Oriental Pratincole and Common Redstart. The southern limits of the African wintering ranges of some species are near the latitude of the northern Seychelles, so they might be expected to be less frequent farther south, especially at Aldabra, for example Wood Warbler *Phylloscopus sibilatrix*, Common Redstart, Grey and White Wagtails, Red-throated Pipit. Even the northern Seychelles are far to the south of the latitude of the normal East African wintering ranges of, for example, Short-toed *Calandrella brachydactyla* and Bimaculated

Richard Baxter

127. Lesser Grey Shrike *Lanius minor*, Aldabra, April 2012. There have been only three records of Lesser Grey Shrike in Seychelles, of which two were on Aldabra in spring, suggesting an unusual migration pattern.

Larks *Melanocorypha bimaculata*, Siberian Stonechat *Saxicola maurus*, Desert Wheatear *O. deserti* and Ortolan Bunting *Emberiza hortulana*. The winter ranges of the species that have been recorded more often at Aldabra extend well to the south.

The island with most migrant records is Bird Island, the most northerly Seychelles island, where 51 of the 78 species have been recorded. Bird Island is a 1-km^2 sand cay, 105 km NNE of Mahé. Migrants arriving in the northern Seychelles from a northerly quarter would probably make first landfall at Bird Island, or nearby Denis Island, which is another cay 95 km northeast of Mahé. The high migrant totals on Bird Island reflect better coverage by observers, but it is also less densely vegetated than many other northern islands, with areas of open grassland and scattered trees, which in turn makes migrants easier to find. In contrast, only 24 species of Palearctic landbirds have been recorded on the much larger but densely wooded mountainous island of Mahé. The more savannah-like habitats on Bird Island might be preferred by Palearctic migrants, making them more likely to land or remain there (Feare 1979). The fact that only 17 migrant species have been recorded on Denis Island is partly due to lack of coverage, but it is also more densely vegetated than Bird Island.

Sam Balderson

128. European Roller *Coracias garrulus*, Alphonse, February 2014 (with Coconut Palm *Cocos nucifera* foliage in the background). Rollers are annual migrants to Seychelles and sometimes stay for long periods. This one was photographed by the airstrip – typical habitat for Palearctic migrants in Seychelles.

Adrian Skerrett

129. With a 'footprint' surface area of over 150 km^2, heavily wooded and with largely inaccessible mountains rising to 900 m, Mahé (here in October 2013) presents a formidable challenge to those in search of Palearctic migrants and records from this island have been correspondingly few.

Circumstances of arrival and departure of migrants

In autumn, migrants tend not to appear in any numbers until the northwest winds have become established. An early change to northwest winds can produce substantial numbers of migrants; for example, in 2009 the wind began to change in late October and a visit to Bird Island on 9th–21st November produced 24 migrant species including Amur Falcon (six), Pacific and Alpine Swifts, Blue-cheeked Bee-eater (at least 20), Short-toed Lark, Tree Pipit (eight), Red-throated Pipit (three), Pied and Desert Wheatears, Rock Thrush, Icterine Warbler *Hippolais icterina*, an unidentified *Ficedula* flycatcher and Ortolan Bunting (J. Phillips unpubl. data). However, migrants have also arrived on southwest or even southeast winds. More birds sometimes arrive if the northwest winds are accompanied by rain: on Aride Island, eight out of 20 (40%) autumn migrants in 1998–2000 arrived on days with >2 mm rain and a further six (30%) were found after heavy rain the day before (J. Bowler unpubl. data).

Spring information is scanty, but Betts (2000) documented an arrival of Palearctic migrants including Blue-cheeked Bee-eater, European Roller, Golden Oriole, Red-backed Shrike *Lanius collurio*, Barn Swallow (50+), Spotted Flycatcher and Yellow Wagtail on Aldabra in late March following a night of strong northwest winds and rain. Other reports of migrants at Aldabra in spring indicated arrivals in similar conditions.

Migrants making landfall after a long ocean crossing might be expected to need to rest and feed before moving on. There are records of long stays for some birds, for example at least 60 days for Amur Falcon, 43 days for European Roller and 35 days for Common Cuckoo, although some of these may have wintered in Seychelles. For most of the more regularly recorded species, however, over 50% of individuals were reported as present for only one day, rising to 70% for Barn Swallow. Some of these apparently short stays were no doubt due to a lack of detailed documentation, but some individuals clearly do move on quickly. On Bird Island, healthy individuals of conspicuous species such as Spotted Flycatcher, Common Redstart and Rock Thrush disappeared during daylight hours shortly after being found and, in the absence of any obvious predators, they had presumably moved on.

Conclusions

Contrary to the assumptions of earlier ornithologists, a wide range of Palearctic migrants appear regularly in the remote Seychelles islands. The fact that the more frequently recorded species tend to have

Adrian Skerrett

130. Silhouette is about one-tenth of the size of Mahé but equally mountainous and inaccessible. This photograph, in May 2006, shows the extensive dense mountain forest, and also the narrow fringe of more open habitats behind the shore, which is where migrants on the larger islands tend to be found.

breeding ranges extending well to the east in the Palearctic, and wintering ranges well to the south in Africa, suggests that some birds may migrate directly across the Indian Ocean, between the Indian subcontinent and Africa. In terms of survival and/or energetics, it may be better for some of these long-distance migrants to make a long ocean crossing rather than follow a route through inhospitable areas of central and southern Asia and the Middle East, where there may be few opportunities for feeding, especially in autumn (Moreau 1972; Newton 2008). Amur Falcons evidently delay their departure from India until favourable northerly winds set in (Moreau 1972), and this could be true for some other migrants that appear in Seychelles late in the autumn.

A long sea crossing in this region has long been assumed to be normal for some landbirds, particularly Amur Falcon (Moreau 1972; Newton 2008). What is surprising, however, is the wide variety of birds involved: not just the few long-winged species suggested by Moreau (1938), but a wide range of taxa, from raptors and crakes to warblers and chats. The distances involved are also longer than envisaged by earlier ornithologists: birds reaching Seychelles have flown thousands of kilometres over open ocean, whether by accident or design.

Some species, especially those for which Seychelles lies farther south than their normal wintering latitudes, may have been 'drifted' to the islands by northwest winds while attempting to take shorter routes across the Arabian Sea. The same applies to the southeastward migrating species (Rose-coloured Starling, Citrine Wagtail and Common Rosefinch), which may also use a sea crossing to reach India and be drifted out over the ocean by northerly winds. Why Oriental Pratincole and Pacific Swift should be relatively frequent in Seychelles, so far from their normal range, is open to speculation, although both species are known to wander widely as vagrants.

C. J. Havemann

131. Corn Crake *Crex crex,* North Island, October 2014. Photographed as it picked its way between coconut husks, this was the fourth accepted sighting in Seychelles. It seems very likely that others will have been overlooked.

The relatively low annual numbers of migrant records partly reflect low levels of coverage and reporting, and it is impossible to estimate the true volume of migration through this region. Given the relatively minute size of the islands, it might be assumed that most migrating birds would fail to see them, and that being unable to find land after flying so far without food or rest they would suffer high rates of mortality. However, many birds that make landfall are evidently in good condition and some apparently stay only a few hours before moving on. The fact that rain may 'force down' migrants suggests that in good weather some birds might continue flying without alighting, even though they have already travelled thousands of kilometres. Similarly, the suggestion that more suitable open habitats on Bird Island attract more migrants implies that some birds might not choose to settle immediately when they sight land.

Most species are less frequent in spring, suggesting they take a different migration route. Amur Falcons follow an overland route up the east side of Africa into Asia in spring (Newton 2008), presumably because the winds are less favourable for a sea crossing at that season. Other species may also be less likely to attempt ocean crossings then. Birds arriving in Seychelles in spring are perhaps more likely to have been wind-drifted, as suggested by the March 1999 'fall' on Aldabra. A sea crossing might become more feasible once southeast winds have developed in April–May. More observations are needed to confirm whether or not some species are genuinely commoner on Aldabra in spring, as the records suggest.

Many Palearctic migrants continue to move long distances within Africa during the northern winter, and some migrants seen in Seychelles at this time, notably Northern Wheatear, could have arrived via East Africa. The apparently commoner status of this and other such 'winter' birds on Aldabra, which is much closer to Africa, support this idea.

There is still much to be learnt about migration through Seychelles, and the Indian Ocean in general. More records, especially in spring and from a wider range of islands, ideally accompanied by meteorological observations, would help to give a better idea of the species' real status in Seychelles and the circumstances of their arrival and departure. Birders visiting Seychelles are invited to send details of their sightings to the SBRC, which can be contacted via www.seychellesbirdrecordscommittee.com or sbrcsecretary@gmail.com

Acknowledgments

We thank our fellow members of the current Seychelles Bird Records Committee for their essential input into record assessment: Michael Betts, Ian Bullock, David Fisher and Rob Lucking. It is a particular pleasure to acknowledge James Ferguson-Lees, by whose efforts the SBRC was originally established in 1992, and past members of the committee. Chris Feare, also a founder member, has contributed significantly to this paper through discussions over the years and helpful comments on earlier drafts. For further discussions and assistance we thank Viv Phillips, current committee members, and our friends and contacts in Seychelles, particularly Georges and Margaret Norah, members of the Savy family and Robbie Bresson. Thanks are due to all observers who have submitted records, in particular the volunteers and staff of Seychelles Islands Foundation and Island Conservation Society. SBRC is grateful to Robert Prŷs-Jones and staff at the Natural History Museum, Tring, for invaluable help over the years.

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John Phillips has worked in wildlife conservation and related spheres for most of his life, including a stint as Scientific Administrator on Cousin Island, in Seychelles, 1981–83. He has been a member of the Seychelles Bird Records Committee since it was established in 1992. **Adrian Skerrett** has been resident in Seychelles since 1980. He is Chairman of the Seychelles NGO Island Conservation Society and Secretary to Seychelles Bird Records Committee. He has authored or contributed to several books with a focus on the birds of Seychelles. **John Bowler** was warden on Aride Island from 1998 to 2001 and authored the WildGuides book *Wildlife of Seychelles*. He currently works for RSPB Scotland and is a keen birder who sits on both the Scottish Birds Rarities Committee and the Seychelles Bird Records Committee.

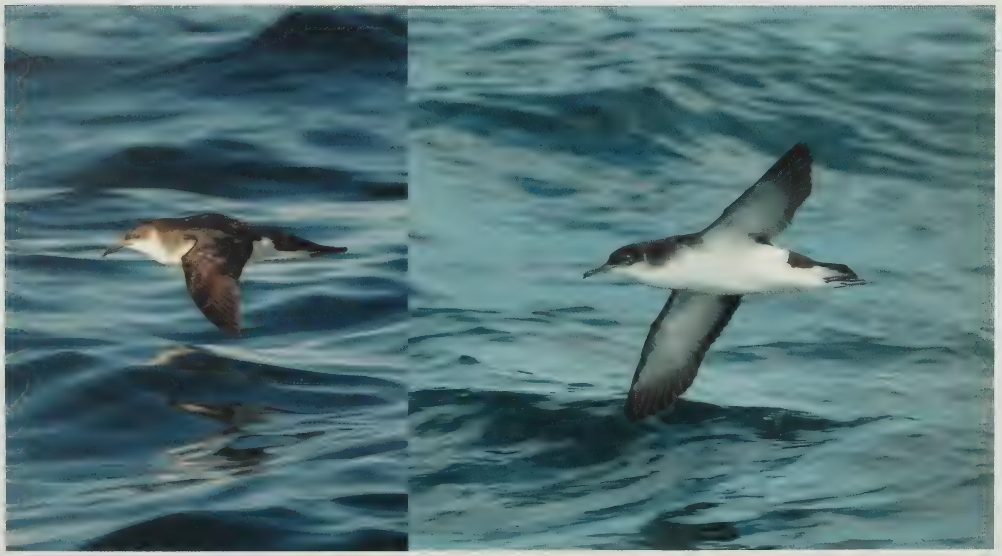
Letters

Foot projection as a field identification character for Balearic and Manx Shearwaters

The recent paper by Gil-Velasco *et al.* (2015) was greatly anticipated and turned out to be most instructive, largely well researched and a very good read.

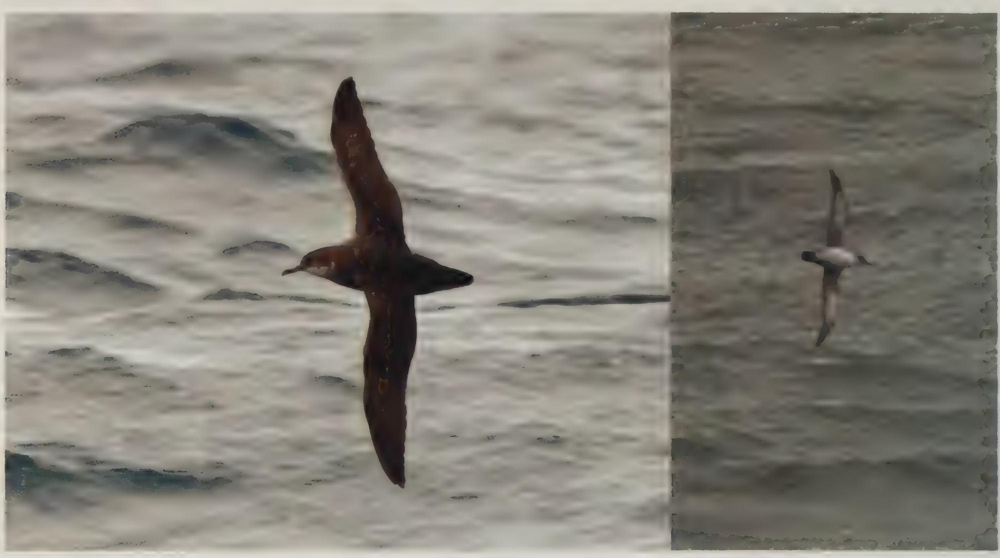
In Devon we are fortunate to be close to coastal headlands which are among the best places in the UK to see Balearic Shearwaters *Puffinus mauretanicus* (in apparently increasing numbers; see Darlaston & Wynn 2012) alongside Manx Shearwaters *P. puffinus.* We are both keen seawatchers with 60+ years' experience between us, during which time we have had more than 10,000 sightings of Balearic Shearwaters off Devon (e.g. MD saw over 2,000 in 2015 alone) and vastly more Manx Shearwaters as well as the UK's first accepted record of Yelkouan Shearwater *P. yelkouan.* MD has also seen and photographed many Balearic and Manx at close range offshore while conducting surveys of the English Channel for MARINElife and while working on a commercial angling boat.

The paper by Gil-Velasco *et al.* (2015) highlighted the importance of the relative foot projection as a supplementary identification character for the three species mentioned above. Although we are in general agreement with the findings presented, we should like to add some of our own observations here. Manx Shearwaters will often show projecting feet when they are about to land or have just taken off, when it sometimes takes a while before they adjust and the feet are fully tucked away. During observations from an angling boat, MD noted that Manx Shearwaters would sometimes investigate the boat briefly with feet projecting as though about to land but would then fly off and make more passes with feet held in this way. (It is also worth noting that, as a general rule, Manx do not attend fishing vessels as readily as Balearic and Yelkouan.) Hence the Manx photographs in plates 132 & 133 show projecting feet, but as the birds flew off into more active flight the feet were then tucked in. We consider that foot projection is not a structural difference between individuals of the same species, but more down to how the bird is holding its legs/feet in relation to its behaviour (this can be seen in other species, for example White-bellied *Fregetta grallaria* and Black-bellied Storm-petrels *F. tropica* in


Mark Darlaston

Mark Darlaston

132 & 133. Manx Shearwaters *Puffinus puffinus* showing foot projection, in coastal waters off Devon, July and August 2010.



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134 & 135. Balearic Shearwaters *Puffinus mauretanicus* (including a pale individual) showing no foot projection, in coastal waters off Devon, October 2010 and November 2009.

Howell 2012).

Conversely, Balearic Shearwaters will often fly with their feet tucked in, showing little to no foot projection (see plates 134 & 135). For example, on a south Devon seawatch on 14th September 2015, when Balearic Shearwaters were flying directly into a strong WSW wind, MD made particular note of how many passing Balearics showed foot projection. Of 41 individuals seen, none showed obvious foot projection in these particular conditions. When birds fly in this way it also changes the overall shape of the rear end, which becomes more similar to Manx (although Balearic is still structurally heavier when compared with the neater, slimmer Manx). One can only speculate why they tuck their feet in, perhaps it makes them more aerodynamic?

What our observations show is that the prevailing conditions and behaviour also have an effect on how both Manx and Balearic Shearwaters hold their feet when flying. While Gil-Velasco *et al.* (2015) stated that 13% of Manx Shearwaters show foot projection (presumably based on photographs), this could vary for one individual depending on the circumstances. It would be interesting to know whether Yelkouan Shearwaters shows less variation in how their feet are held in relation to the prevailing conditions – all of the photographs of Yelkouan Shearwater in Gil-Velasco *et al.*'s paper appear to have been taken during relatively calm conditions.

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Notes

Arctic Terns attempting to raise a Little Tern on Blakeney Point, Norfolk

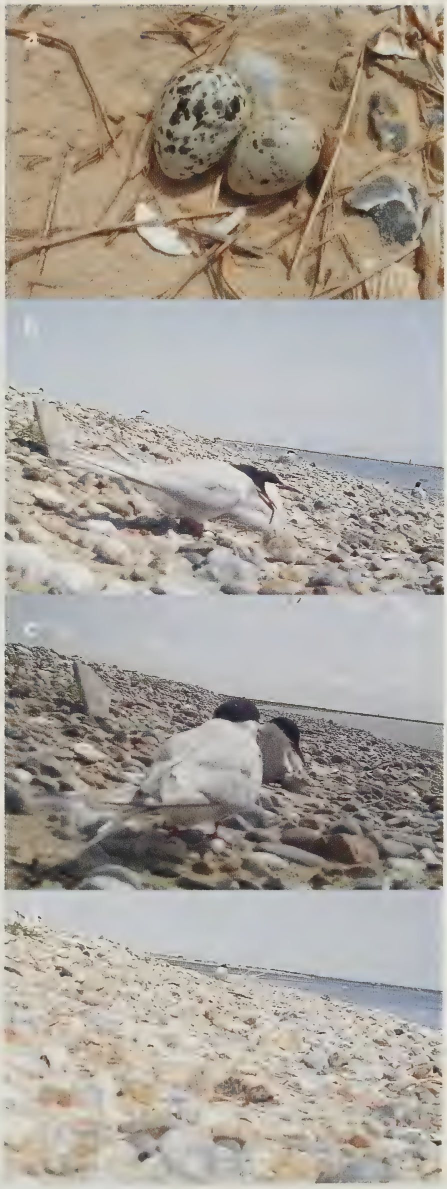
On 12th June 2015, the National Trust rangers conducted a survey of nesting Little *Sternula albifrons*, Common *Sterna hirundo* and Arctic Terns *S. paradisaea* on Blakeney Point, Norfolk, when we discovered a scrape containing a Little Tern egg and an Arctic Tern egg.

A trail camera was positioned overlooking the nest scrape on 29th June (plate 136a). The resulting footage revealed that the scrape was being incubated solely by a pair of Arctic Terns. At 04.45 hrs on 9th July, the camera captured images of a Little Tern chick. The chick was fed and brooded by the Arctic Terns (plate 136b,c) and, at 15.05 hrs that same day, the camera revealed an Arctic Tern chick alongside the Little Tern chick (see plate 136d). Prior to the Arctic Tern chick hatching, the Little Tern chick was fed approximately 16 times in ten hours.

The chicks were both recorded by the camera at 19.20 hrs on 9th July, but had disappeared by the time the camera was next triggered, two minutes later. One of the adult Arctic Terns was then recorded repeatedly searching the area for the chicks, which suggested that they were predated, probably by a gull (which is not uncommon at this site) although the camera was not triggered. Between the Arctic Tern chick hatching and being predated, it was fed twice; the Little Tern chick was also fed twice during the same period.

Little Terns showed signs of poor feeding on Blakeney Point in June 2015, so perhaps the Little Tern egg was abandoned. The mean incubation period is 21 days for both Little and Arctic Terns (Cabot & Nisbet 2013), so the eggs must have been laid within approximately a day of each other to hatch within 12 hours. This suggests that the Little Tern abandoned its egg almost immediately after laying. There is also a chance that the Arctic Tern may have forced the Little Tern to abandon its egg, although this is not typical behaviour: no instances of aggressive behaviour between Arctic and Little Terns have been witnessed on the Point.

As far as we are aware, this is the first known case of Arctic Terns attempting to raise a Little Tern chick. Interestingly, a shared nest scrape containing two Little Tern eggs and a Common Tern egg was discovered within 5 m of the site



Sarah Johnson/trail camera footage

136. Images showing the shared nest scrape on Blakeney Point, Norfolk, in June–July 2015. These show the nest scrape with one Arctic Tern *Sterna paradisaea* egg (left) and one Little Tern *Sternula albifrons* egg (a, 29th June); an Arctic Tern feeding a Little Tern chick (b, 9th July); an Arctic Tern brooding a Little Tern chick (c, 9th July); and Little Tern (left) and Arctic Tern chicks together in the scrape (d, 9th July).

described here (Nichols & Tegala 2015). The latter was incubated solely by Little Terns, although the Common Tern pair was frequently seen near the nest.

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Dunnock feeding sunflower heart to juvenile Common Cuckoo

On 8th July 2015, a Dunnock *Prunella modularis* was taking fragments of sunflower seed from under the feeders in my north Norfolk garden, and disappearing into what was once a well-maintained shrubbery but is now a dense, impenetrable thicket. Without wishing to cut my way into the undergrowth, I carried out a search for a nest at arm's length only but without success. An intermittent watch was maintained on the area but after more than a week had passed with no sign of any recently fledged Dunnocks, I assumed the nesting attempt had failed.

To my surprise, in the late evening of 29th July 2015, a Dunnock was feeding a juvenile Common Cuckoo *Cuculus canorus* on a stone bench only a few metres from where I had suspected the Dunnock nest might be. To my even greater surprise and as plate 137 shows, the young Cuckoo was fed a whole sunflower heart. While the evidence is circumstantial, it seems likely that the young Cuckoo fledged from a nest somewhere close to where it was first seen; I found a flattened Dunnock nest while tidying up the shrubbery/thicket some months later.

BWP states that, although diverse, a young Cuckoo's diet must be predominantly animal matter. However, based on my own experience, and that of other nest recorders, invertebrates were in short supply in the summer of 2015, and a larger than usual amount of vegetable matter was fed to nestlings. What few Blackbirds *Turdus merula* and Common Starlings *Sturnus vulgaris* known to have fledged in my local area appear to have done so on a diet rich in sunflower hearts and sultanas. Which in turn leads me to wonder just how much vegetable matter this young Cuckoo consumed.

Host species feeding juvenile Cuckoos in gardens appear to be poorly documented and the only record known to me at the time of writing is contained in a post on the BTO Nest Record Scheme discussion forum by David Norman in August 2015 which states: 'In 2005, during fieldwork for the Cheshire and Wirral tetrad atlas, a householder recorded a juvenile Cuckoo in her garden from mid June to mid July, being fed on sunflower hearts by a group of House Sparrows [*Passer domesticus*]!'.

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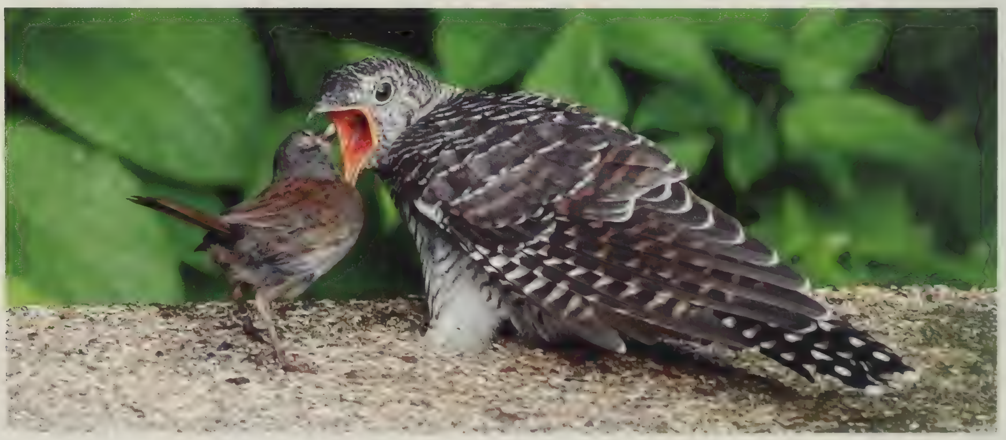


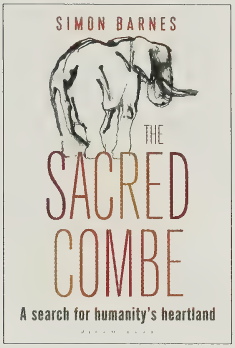
Noel Elms

137. Dunnock *Prunella modularis* feeding sunflower heart to juvenile Common Cuckoo *Cuculus canorus*, Norfolk, July 2015.

Reviews

The Sacred Combe: a search for humanity's heartland

By Simon Barnes; Bloomsbury, 2016
Hbk, 238pp; black-and-white illustrations
ISBN 978-1-4729-1402-6
RRP £14.99, *BB* **Bookshop price £13.49**



This latest offering from Simon Barnes is a meditation on the need that all of us have for a special place in which to celebrate nature. His 'sacred combe' is the South Luangwa National Park in Zambia, a place he fell in love with on his very first night in the Luangwa River valley in the late 1980s when elephants made a meal of his grass-thatched hut. Barnes has returned to 'the Valley' many times since, including a two-month stint at the end of the fierce dry season when the river dwindles to a trickle. In September and October it becomes a killing ground for the resident Lions *Panthera leo*, Leopards *P. pardus* and crocodiles as the drought-stricken herbivore herds have to run the predator gauntlet on daily trips to their only water supply.

South Luangwa is a key destination for upmarket safaris because poaching has largely been kept in check and the wildlife is still prolific. Barnes spent his two-month sabbatical from *The Times* (where he was chief sports writer until 2014) living and working at one of these safari camps and paints delightful vignettes of wildlife encounters he had then – and on his many subsequent trips. He also writes evocatively of his rural home – and adjacent broad – in Norfolk.

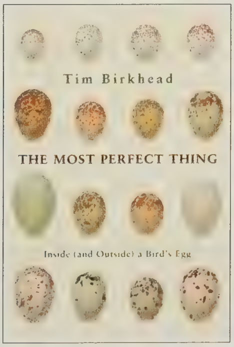
But as his wife Cindy perceptively points out (p. 181): 'You're telling your readers that they can find a sacred combe if they're rich enough to go to Africa or lucky enough to live in Norfolk.' (A Sacred Combe Safari with Simon Barnes will set you back £6,000.) So Barnes devotes a chapter to… 'A sacred combe in Redditch'. And his account of a day on a pocket-sized nature reserve in the Black Country has as much joy in nature as his African adventures – and he finds (on call) the reserve's first Firecrest *Regulus ignicapilla.*

In 101 bite-sized chapters, Barnes celebrates our primordial need for nature and natural places in an engaging style that cannot fail to lift the spirits of anyone stuck in an office or on a train and craving their next visit to their own sacred combe. My only criticism is not of the author, who will no doubt share my disappointment, but of the proofreading by his publisher. There is approximately one typo – inserted or missing words – in every one of those 101 chapters. For a publisher of the calibre of Bloomsbury, that is a very poor performance.

Adrian Pitches

The Most Perfect Thing: inside (and outside) a bird's egg

By Tim Birkhead; Bloomsbury, 2016
Hbk, 288pp; eight pages of colour photographs, line-drawings
ISBN 978-1-4088-5125-8
BB **Bookshop price £16.99**



Given the track record of the author, I was expecting this to be an enjoyable and informative read, and I was far from disappointed. He has the happy knack of weaving stories together that hold the attention, imparting knowledge gently, with satisfyingly little effort required on the part of the reader. A few of the sections that deal with the complex processes involved in egg formation and chick development inevitably require some technical detail and perhaps demand a little more concentration but at no point does it become turgid or dull.

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The book deals with the biological mechanisms involved in egg production and development, as well as the evolutionary aspects as to why things are as they are – the *how* as well as the *why* as he puts it. I found both to be equally engaging and was repeatedly surprised by the insights provided in areas I thought I knew better. To take just one example that stuck in my mind: the redoubtable Goldcrest *Regulus regulus* lays large eggs in relation to its body size and is simply too small to incubate an entire clutch effectively in the normal manner. It gets around this by lining its tiny nest especially well with feathers and moss to retain heat and, most amazingly, by using its legs (which are well-endowed with blood vessels) to aid the process. Even then it has to constantly shuffle its eggs around in the nest to ensure that all receive sufficient heat, something picked up as a constant 'clunking' sound though a researcher's microphone placed within a nest.

The book's coverage is wide ranging to reflect the huge diversity in birds' eggs and breeding behaviour but two species form a central thread running through the book and the author returns to these repeatedly. One is the domestic chicken *Gallus gallus domesticus*, the subject of intensive global research as a result of its commercial importance. Much of our understanding of how eggs are formed, the process of laying, embryo development and hatching come from this well-studied species. The second is the Common Guillemot *Uria aalge*, Tim Birkhead's primary study species during his research career. This is a bird whose highly varied eggs attracted much early attention from collectors and has provoked interest among researchers ever since. The teaser as to why the Guillemot's eggs are so strongly pointed is a recurring theme and is not resolved until near the end (and even then not fully). If you think you already know the answer, you may come away surprised.

The way that our knowledge and understanding has developed over time is also a recurring theme in the book. It is part of the story-telling approach, highlighting early insights and breakthroughs from long ago, as well as examples where people got things badly wrong. Early misunderstandings could be passed on unquestioningly from one authority to another, setting back knowledge of how things really worked for decades. We have come a long way in recent times but significant and sometimes surprising gaps in knowledge remain.

The book strays, forgivably, from its main subject in the final few pages and finishes on a poignant note, reflecting on the potential impacts of climate change on birds and the value of funding long-term research studies, a subject that he is better placed to comment on than most.

Ian Carter

Finding Birds in Northern Greece

By Dave Gosney; Easybirder.co.uk, 2015
87 min DVD and 44pp pbk booklet
ISBN 978-1-9073-164-94 (DVD) and 978-1-9073-164-87 (booklet)
RRP: DVD £19.95, booklet £9.50, both together £26.45
***BB* Bookshop price: DVD £18.95, booklet £7.95, both together £23.95**

The region of northern Greece, running from the border with Albania in the west to Turkey in the east, spans almost 400 km. It is a popular holiday destination and while most tourists head to beach resorts on the Halkidiki Peninsula, there are many other places for birders to visit.

This whole area is packed with birds, and with around 200 species breeding it is no surprise that Dave Gosney filmed over 100 species on a recent three-week trip. As with all of Dave's videos, this one offers an overview of the area and concentrates on 18 locations to visit. Top of the list for most birders is the Evros Delta in the east, which includes the fabulous Anthia marshes. Moving slightly inland, the Dadia Forest supports good numbers of raptors including 20 pairs of Lesser Spotted Eagles *Aquila pomarina*. Not far away there is a stake-out at the Avas Gorge where you can see Masked Shrike *Lanius nubicus* and Olive-tree Warbler *Hippolais olivetorum* with ease. Moving west there are the wetlands at Thimaria Marsh, Lake Ismarida, Porto Lagos and Mandria Beach. Another top-rated site is the Nestos Delta, where Spur-winged Lapwings *Vanellus spinosus* are present at their most westerly

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point in Europe. Drier habitats featured are the Nestos Gorge, Mount Pangeo, Mount Vrontou and Mount Belles. Other wetland sites visited include the famous Lake Kerkini, the deltas at Axios, Loudios and Gallikos, and the lesser-known lagoons at Kalohori, Kitros, Angelohori and Epanomi.

As always the footage is good, supported by a helpful commentary. Other species featured include Rock Partridge *Alectoris graeca*, Eurasian Black Vulture *Aegypius monachus*, Lesser Kestrel *Falco naumanni*, Red-footed Falcon *F. vespertinus*, Sombre Tit *Poecile lugubris*, Eastern Orphean *Sylvia crassirostris*, 'Eastern Subalpine' *S. cantillans albistriata* and Barred Warblers *S. nisoria* and Rock Thrush *Monticola saxatilis*.

The booklet that accompanies the DVD can be bought separately. It features all of these sites and is full of maps, GPS references for specific species, plus tips for getting the best results. Currently there are return flights to Thessaloniki from the UK for as little as £80 for May, so this destination really deserves more attention from UK birders.

Keith Betton

Recent reports

Compiled by Barry Nightingale and Harry Hussey

This summary of unchecked reports covers early February to early March 2016.

Headlines It was another very quiet period, with very few new birds to report. A Black Duck in Co. Cork was one of the few new wildfowl, while four new White-billed Divers included one in Ireland and one off Cornwall. Also in Cornwall, a Franklin's Gull was seen briefly and a new juvenile American Herring Gull appeared, with another in the Outer Hebrides. Otherwise, apart from a range of long-staying rarities, new arrivals were confined to a thin scatter of scarce migrants.

Canada Goose *Branta canadensis* Lissadell (Co. Sligo), race *interior*, long-stayer to 5th March. **Cackling Goose** *Branta hutchinsii* Lissadell, long-stayer to 6th February; Islay (Argyll), 26th–28th February. **American Wigeon** *Anas americana* Long-stayers in Co. Donegal, Highland, Co. Kerry, Lancashire & N Merseyside, Co. Leitrim, Northumberland, Yorkshire; presumed new arrivals in North-east Scotland, Orkney, Shropshire and Somerset. **Black Duck** *Anas rubripes* Baltimore (Co. Cork), 11th–29th February. **Ferruginous Duck** *Aythya nyroca* Long-stayers in Buckinghamshire, Co. Durham, Hampshire and Norfolk; presumed new arrivals in Surrey and Yorkshire. **Lesser Scaup** *Aythya affinis* Long-stayers in Co. Antrim, Cornwall, Co. Galway and East Glamorgan; Lough Gara (Co. Sligo), 15th February. **King Eider** *Somateria spectabilis* Long-stayers in Fife, Co. Sligo and Co. Wexford. **Black Scoter** *Melanitta americana* Rossbeigh (Co. Kerry), long-stayer to 15th February. **Surf Scoter** *Melanitta perspicillata* Long-stayers in Fife, Co. Galway, Lothian, Scilly, Shetland and Yorkshire; presumed new arrivals in Cheshire & Wirral (two), Co. Kerry, Co. Louth and Outer Hebrides (three). **Hooded Merganser** *Lophodytes cucullatus* Corsham Lake (Wiltshire), 23rd–27th February.

Pacific Diver *Gavia pacifica* Long-stayers Marazion/Penzance (Cornwall), to 29th February, and Tawin (Co. Galway) to 14th February. **White-billed Diver** *Gavia adamsii* South Ronaldsay (Orkney), long-stayer to 29th February; Ballyvaughan (Co. Clare), 18th February; Coll (Argyll), 23rd February; Cape Cornwall (Cornwall), 25th–29th February; Skye (Highland), 28th February.

Cattle Egret *Bubulcus ibis* Long-stayers Co. Limerick, Somerset (one or two), Suffolk (two) and Co. Wexford; presumed new arrivals Kent and Norfolk. **Glossy Ibis** *Plegadis falcinellus* Reports from Co. Antrim, Co. Carlow, Cheshire & Wirral, Co. Clare, Co. Cork (three), Cornwall, Devon (two), Essex (two), Gwent, Kent, Co. Kerry, Somerset, Suffolk (two), Sussex, Co. Waterford and Co. Wexford (three).

Northern Harrier *Circus hudsonius* North Ronaldsay (Orkney), long-stayer to 28th

Graeme Willetts

138. Glossy Ibis *Plegadis falcinellus*, Marazion, Cornwall, February 2016.

February. **Pallid Harrier** *Circus macrourus* In Norfolk, long-stayer Flitcham to 11th February, roosting at Roydon Common, to 20th February, also Snettisham, 16th February.

Hudsonian Whimbrel *Numenius hudsonicus* Marazion/Perranuthnoe, long-stayer to 6th March. **Spotted Sandpiper** *Actitis macularius* Pilmore (Co. Cork), long-stayer to 23rd February. **Greater Yellowlegs** *Tringa melanoleuca* Whippingham (Isle of Wight), long-stayer to 6th March. **Lesser Yellowlegs** *Tringa flavipes* Breydon (Norfolk), long-stayer intermittently to 20th February. **Long-billed Dowitcher** *Limnodromus scolopaceus* Long-stayers Keyhaven/Pennington Marshes (Hampshire), to 6th March; Wanlip Meadows, to 22nd February, then Rutland Water (both Leicestershire & Rutland), 23rd February to 6th March; Cresswell Pond/Druridge Pools (Northumberland), to 5th March.

Forster's Tern *Sterna forsteri* Kinvarra (Co. Galway), long-stayer to 28th February. **Bonaparte's Gull** *Chroicocephalus philadelphia* Long-stayer Dawlish Warren (Devon), to 3rd March; Thurso (Highland), 23rd February. **Franklin's Gull** *Larus pipixcan* Siblyback Pool (Cornwall), 5th March. **American Herring Gull** *Larus smithsonianus* Newlyn and Mousehole (Cornwall), 8th February to 5th March; Barra (Outer Hebrides), 24th February to 5th March. **Glaucous-winged Gull** *Larus glaucescens* Castletownbere (Co. Cork), long-stayer to 3rd March.

Gyr Falcon *Falco rusticolus* North Uist (Outer Hebrides), long-stayer again 21st and 25th February.

Penduline Tit *Remiz pendulinus* Long-stayers Saltholme (Cleveland), two to 28th, one to 29th February; Horsbere Pool (Gloucestershire), two to 6th March; and Titchfield Haven (Hampshire), two to 6th March. Strumpshaw Fen (Norfolk), 27th–28th February. **'Northern Long-tailed Tit'** *Aegithalos c. caudatus* St Margaret's at Cliffe, six, 4th March; Walmer (both Kent), four, 6th March. **Pallas's Leaf Warbler** *Phylloscopus proregulus* Portesham (Dorset), 25th February to 6th March. **Dusky Warbler** *Phylloscopus fuscatus* Ham Wall (Somerset), long-stayer to 29th February. **Rose-coloured Starling** *Pastor roseus* Lizard (Cornwall), long-stayer to 1st March. **Arctic Redpoll** *Acanthis hornemanni* Birling Carrs (Northumberland), long-stayer to 14th February.

Notable records of commoner species

Smew *Mergellus albellus* Widespread, with concentrations of 13 at Needingworth Quarry Lakes (Cambridgeshire), nine at Eyebrook Resr and six at Rutland Water (both Leicestershire & Rutland) in February. **Slavonian Grebe** *Podiceps auritus* Widespread, with concentrations of 42 off Musselburgh (Lothian) and 22 Ardmore Point (Argyll) in early March. **Black-necked Grebe** *Podiceps nigricollis* Widespread, with 12 Portland Harbour (Dorset) and 11 Staines Resr (Surrey) in early March. **Water Pipit** *Anthus spinoletta* Widespread, with concentrations of up to ten at Lychett Bay (Dorset), and up to seven at both Dorman's Pool (Cleveland) and Staines Moor (Surrey).

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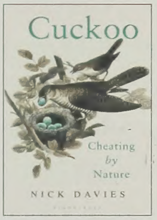

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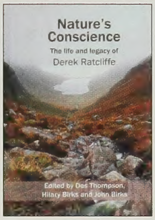

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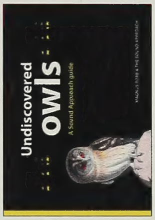

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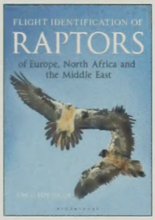

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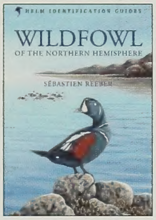

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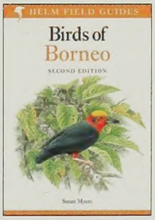

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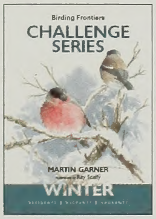

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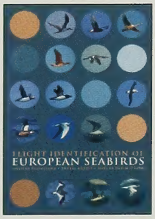

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